

FIG.1A

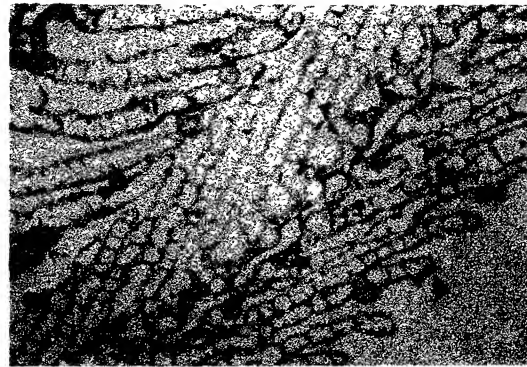


FIG.1B

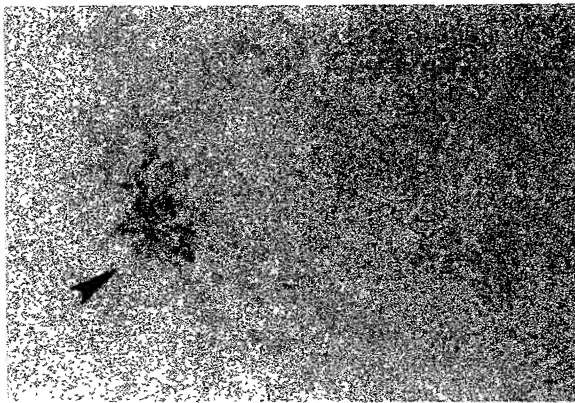


FIG.1C



FIG.1D

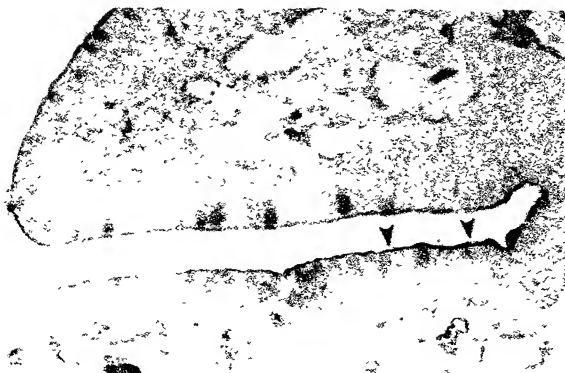


FIG.1E

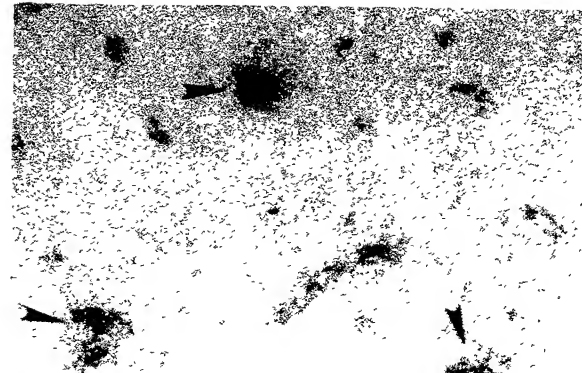


FIG.1F

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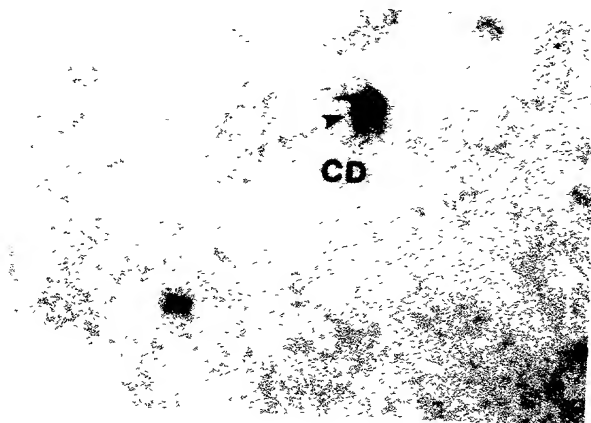


FIG.2A

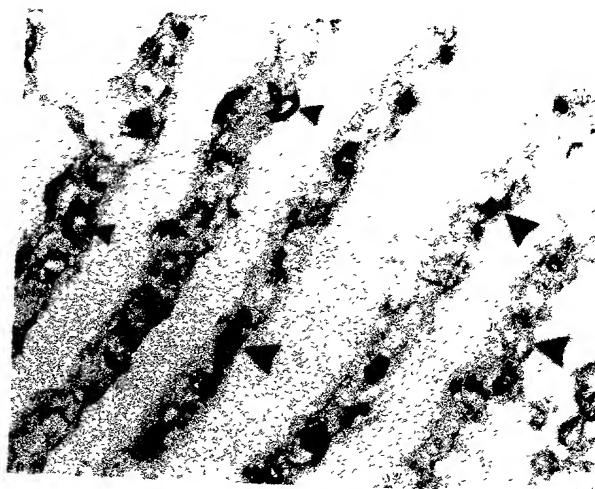


FIG.2B

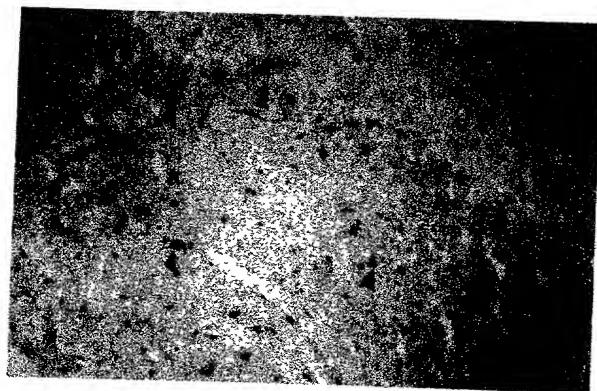


FIG.2C

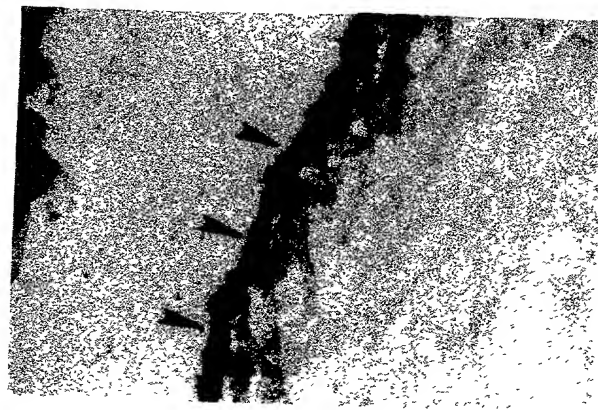


FIG.2D

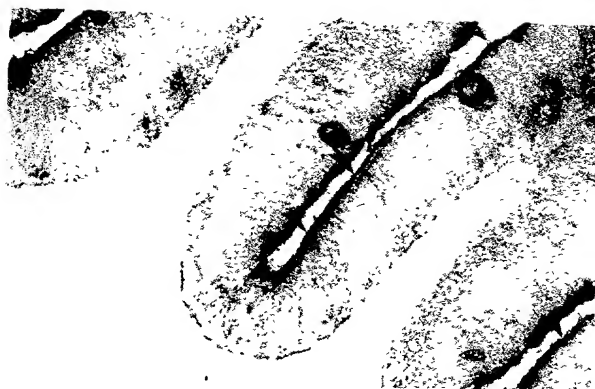


FIG.2E

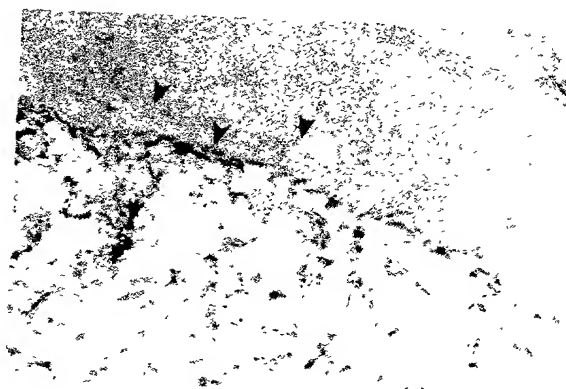


FIG.2F

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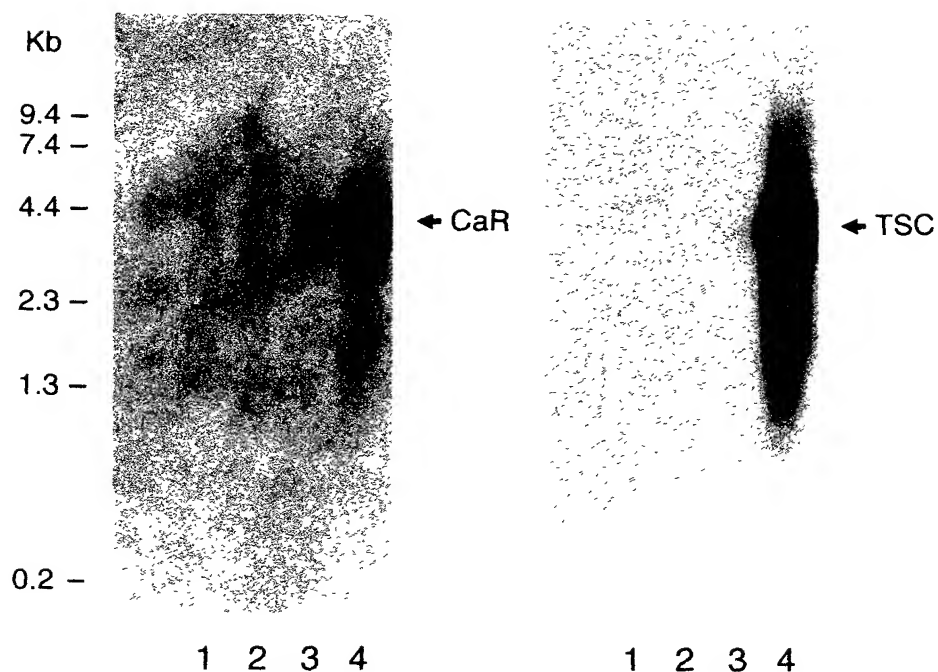


FIG.3A

FIG.3B

aattccgttg ctgtcggttc agtccaagtc tctccagtg caaaatgaga aatgggtggtc 60  
gccattacag gaacatgcac tacatctgtg ttaatgaaat attgtcagtt atctgaaggt 120  
tattaaaatg tttctgcaag gatggcttca cgagaaatca attctgcacg ttttccatt 180  
gtcattgtat gaataactga ccaaagggat gtaacaaaat ggaacaaagc tgaggaccac 240  
gttcaccctt tcttgagca tacgatcaac cctgaaggag atggaagact tgaggaggaa 300  
atggggattg atcttccagg agttctgtg taaagcgatc cctcaccatt acaaagataa 360  
gcagaaatcc tccaggcatc ctctgtaaac gggctggcgt agtgtggctt ggtcaaggaa 420  
cagagacagg gctgcaca atg gct cag ctt cac tgc caa ctc tta ttc ttg 471  
Met Ala Gln Leu His Cys Gln Leu Leu Phe Leu  
1 5 10

gga ttt aca ctc cta cag tgc tac aat gtc tca ggg tat ggt cca aac 519  
Gly Phe Thr Leu Leu Gln Ser Tyr Asn Val Ser Gly Tyr Gly Pro Asn  
15 20 25

caa agg gcc cag aag aaa gga gac atc ata ctg gga ggt ctc ttc cca 567  
Gln Arg Ala Gln Lys Lys Gly Asp Ile Ile Leu Gly Gly Leu Phe Pro  
30 35 40

ata cac ttt gga gta gcc gcc aag gat cag gac tta aaa tgc aga ccg 615  
Ile His Phe Gly Val Ala Ala Lys Asp Gln Asp Leu Lys Ser Arg Pro  
45 50 55

gag gcg aca aaa tgt att cgg tac aat ttt cga ggc ttc cga tgg ctc 663  
Glu Ala Thr Lys Cys Ile Arg Tyr Asn Phe Arg Gly Phe Arg Trp Leu  
60 65 70 75

cag gcg atg ata ttc gca att gaa gag att aac aac agt atg act ttc 711  
Gln Ala Met Ile Phe Ala Ile Glu Glu Ile Asn Asn Ser Met Thr Phe  
80 85 90

ctg ccc aat atc acc ctg gga tat cgc ata ttt gac acg tgt aac acc 759  
Leu Pro Asn Ile Thr Leu Gly Tyr Arg Ile Phe Asp Thr Cys Asn Thr  
95 100 105

gtg tcc aag gcg cta gag gca aca ctc agc ttt gtg gcc cag aac aaa 807  
Val Ser Lys Ala Leu Glu Ala Thr Leu Ser Phe Val Ala Gln Asn Lys  
110 115 120

atc gac tgc ctg aac tta gat gag ttc tgt aac tgc tct gac cat atc 855  
Ile Asp Ser Leu Asn Leu Asp Glu Phe Cys Asn Cys Ser Asp His Ile  
125 130 135

cca tcc aca ata gca gtg gtc ggg gca acc ggg tca gga atc tcc acg 903  
Pro Ser Thr Ile Ala Val Val Gly Ala Thr Gly Ser Gly Ile Ser Thr  
140 145 150 155

gct gtg gcc aat cta ttg gga tta ttt tac att cca cag gtc agc tat 951  
Ala Val Ala Asn Leu Leu Gly Leu Phe Tyr Ile Pro Gln Val Ser Tyr  
160 165 170

gcc tcc tgc agc agg ctg ctc agc aac aag aat gag tac aag gcc ttc 999  
Ala Ser Ser Ser Arg Leu Leu Ser Asn Lys Asn Glu Tyr Lys Ala Phe  
175 180 185

ctg agg acc atc ccc aat gat gag caa cag gcc acg gcc atg gcc gag 1047  
Leu Arg Thr Ile Pro Asn Asp Glu Gln Gln Ala Thr Ala Met Ala Glu  
190 195 200

FIG. 4A

atc atc gag cac ttc cag tgg aac tgg gtg gga acc ctg gca gcc gac Ile Ile Glu His Phe Gln Trp Asn Trp Val Gly Thr Leu Ala Ala Asp 205 210 215	1095
gat gac tat ggc cgc cca ggc att gac aag ttc cgg gag gag gcc gtt Asp Asp Tyr Gly Arg Pro Gly Ile Asp Lys Phe Arg Glu Glu Ala Val 220 225 230 235	1143
aag agg gac atc tgt att gac ttc agt gag atg atc tct cag tac tac Lys Arg Asp Ile Cys Ile Asp Phe Ser Glu Met Ile Ser Gln Tyr Tyr 240 245 250	1191
acc cag aag cag ttg gag ttc atc gcc gac gtc atc cag aac tcc tcg Thr Gln Lys Gln Leu Glu Phe Ile Ala Asp Val Ile Gln Asn Ser Ser 255 260 265	1239
gcc aag gtc atc gtg gtc ttc tcc aat ggc ccc gac ctg gag ccg ctc Ala Lys Val Ile Val Val Phe Ser Asn Gly Pro Asp Leu Glu Pro Leu 270 275 280	1287
atc cag gag ata gtt cgg aga aac atc acc gat cgg atc tgg ctg gcc Ile Gln Glu Ile Val Arg Arg Asn Ile Thr Asp Arg Ile Trp Leu Ala 285 290 295	1335
agc gag gct tgg gcc agc tct tcg ctc att gcc aag cca gag tac ttc Ser Glu Ala Trp Ala Ser Ser Ser Leu Ile Ala Lys Pro Glu Tyr Phe 300 305 310 315	1383
cac gtg gtc ggc ggc acc atc ggc ttc gct ctc agg gcg ggg cgt atc His Val Val Gly Gly Thr Ile Gly Phe Ala Leu Arg Ala Gly Arg Ile 320 325 330	1431
cca ggg ttc aac aag ttc ctg aag gag gtc cac ccc agc agg tcc tcg Pro Gly Phe Asn Lys Phe Leu Lys Glu Val His Pro Ser Arg Ser Ser 335 340 345	1479
gac aat ggg ttt gtc aag gag ttc tgg gag gag acc ttc aac tgc tac Asp Asn Gly Phe Val Lys Glu Phe Trp Glu Glu Thr Phe Asn Cys Tyr 350 355 360	1527
ttc acc gag aag acc ctg acg cag ctg aag aat tcc aag gtg ccc tcg Phe Thr Glu Lys Thr Leu Thr Gln Leu Lys Asn Ser Lys Val Pro Ser 365 370 375	1575
cac gga ccg gcg gct caa ggg gac ggc tcc aag gcg ggg aac tcc aga His Gly Pro Ala Ala Gln Gly Asp Gly Ser Lys Ala Gly Asn Ser Arg 380 385 390 395	1623
cgg aca gcc cta cgc cac ccc tgc act ggg gag gag aac atc acc agc Arg Thr Ala Leu Arg His Pro Cys Thr Gly Glu Glu Asn Ile Thr Ser 400 405 410	1671
gtg gag acc ccc tac ctg gat tat aca cac ctg agg atc tcc tac aat Val Glu Thr Pro Tyr Leu Asp Tyr Thr His Leu Arg Ile Ser Tyr Asn 415 420 425	1719
gta tac gtg gcc gtc tac tcc att gct cac gcc ctg caa gac atc cac Val Tyr Val Ala Val Tyr Ser Ile Ala His Ala Leu Gln Asp Ile His 430 435 440	1767

FIG. 4B

10016496-121001

tct tgc aaa ccc ggc acg-ggc atc ttt gca aac gga tct tgt gca gat	1815
Ser Cys Lys Pro Gly Thr Gly Ile Phe Ala Asn Gly Ser Cys Ala Asp	
445 450 455	
att aaa aaa gtt gag gcc tgg cag gtc ctc aac cat ctg ctg cat ctg	1863
Ile Lys Lys Val Glu Ala Trp Gln Val Leu Asn His Leu Leu His Leu	
460 465 470 475	
aag ttt acc aac agc atg ggt gag cag gtt gac ttt gac gat caa ggt	1911
Lys Phe Thr Asn Ser Met Gly Glu Gln Val Asp Phe Asp Asp Gln Gly	
480 485 490	
gac ctc aag ggg aac tac acc att atc aac tgg cag ctc tcc gca gag	1959
Asp Leu Lys Gly Asn Tyr Thr Ile Ile Asn Trp Gln Leu Ser Ala Glu	
495 500 505	
gat gaa tcg gtg ttg ttc cat gag gtg ggc aac tac aac gcc tac gct	2007
Asp Glu Ser Val Leu Phe His Glu Val Gly Asn Tyr Asn Ala Tyr Ala	
510 515 520	
aag ccc agt gac cga ctc aac atc aac gaa aag aaa atc ctc tgg agt	2055
Lys Pro Ser Asp Arg Leu Asn Ile Asn Glu Lys Lys Ile Leu Trp Ser	
525 530 535	
ggc ttc tcc aaa gtg gtt cct ttc tcc aac tgc agt cga gac tgt gtg	2103
Gly Phe Ser Lys Val Val Pro Phe Ser Asn Cys Ser Arg Asp Cys Val	
540 545 550 555	
ccg ggc acc agg aag ggg atc atc gag ggg gag ccc acc tgc tgc ttt	2151
Pro Gly Thr Arg Lys Gly Ile Ile Glu Gly Glu Pro Thr Cys Cys Phe	
560 565 570	
gaa tgc atg gca tgt gca gag gga gag ttc agt gat gaa aac gat gca	2199
Glu Cys Met Ala Cys Ala Glu Gly Glu Phe Ser Asp Glu Asn Asp Ala	
575 580 585	
agt gcg tgt aca aag tgc ccg aat gat ttc tgg tcg aat gag aac cac	2247
Ser Ala Cys Thr Lys Cys Pro Asn Asp Phe Trp Ser Asn Glu Asn His	
590 595 600	
acg tcg tgc atc gcc aag gag atc gag tac ctg tcg tgg acg gag ccc	2295
Thr Ser Cys Ile Ala Lys Glu Ile Glu Tyr Leu Ser Trp Thr Glu Pro	
605 610 615	
ttc ggg atc gct ctg acc atc ttc gcc gta ctg ggc atc ctg atc acc	2343
Phe Gly Ile Ala Leu Thr Ile Phe Ala Val Leu Gly Ile Leu Ile Thr	
620 625 630 635	
tcc ttc gtg ctg ggg gtc ttc atc aag ttc agg aac act ccc atc gtg	2391
Ser Phe Val Leu Gly Val Phe Ile Lys Phe Arg Asn Thr Pro Ile Val	
640 645 650	
aag gcc acc aac cgg gag ttg tcc tac ctg ctg ctc ttc tcc ctc atc	2439
Lys Ala Thr Asn Arg Glu Leu Ser Tyr Leu Leu Leu Phe Ser Leu Ile	
655 660 665	
tgc tgc ttc tcc agc tcg ctc atc ttc atc ggc gag ccc agg gac tgg	2487
Cys Cys Phe Ser Ser Ser Leu Ile Phe Ile Gly Glu Pro Arg Asp Trp	
670 675 680	

acc tgt cgg ctc cgc caa-ccg gcc ttt ggc atc agc ttc gtc ctg tgc	2535
Thr Cys Arg Leu Arg Gln Pro Ala Phe Gly Ile Ser Phe Val Leu Cys	
685 690 695	
atc tcc tgc atc ctg gtg aag acc aac cgg gtg ctg ctg gtc ttc gag	2583
Ile Ser Cys Ile Leu Val Lys Thr Asn Arg Val Leu Leu Val Phe Glu	
700 705 710 715	
gcc aag atc ccc acc agc ctc cac cgc aag tgg gtg ggc ctc aac ctg	2631
Ala Lys Ile Pro Thr Ser Leu His Arg Lys Trp Val Gly Leu Asn Leu	
720 725 730	
cag ttc ctc ctg gtc ttc ctc tgc atc ctg gtg caa atc gtc acc tgc	2679
Gln Phe Leu Leu Val Phe Leu Cys Ile Leu Val Gln Ile Val Thr Cys	
735 740 745	
atc atc tgg ctc tac acc gcg cct ccc tcc agc tac agg aac cat gag	2727
Ile Ile Trp Leu Tyr Thr Ala Pro Pro Ser Ser Tyr Arg Asn His Glu	
750 755 760	
ctg gag gac gag gtc atc ttc atc acc tgc gac gag ggc tcg ctc atg	2775
Leu Glu Asp Glu Val Ile Phe Ile Thr Cys Asp Glu Gly Ser Leu Met	
765 770 775	
gcg ctg ggc ttc ctc atc ggc tac acc tgc ctc ctc gcc gcc atc tgc	2823
Ala Leu Gly Phe Leu Ile Gly Tyr Thr Cys Leu Leu Ala Ala Ile Cys	
780 785 790 795	
ttc ttc ttc gcc ttc aag tcc cgt aag ctg ccg gag aac ttc aac gag	2871
Phe Phe Phe Ala Phe Lys Ser Arg Lys Leu Pro Glu Asn Phe Asn Glu	
800 805 810	
gct aag ttc atc acc ttc agc atg ttg atc ttc ttc atc gtc tgg atc	2919
Ala Lys Phe Ile Thr Phe Ser Met Leu Ile Phe Phe Ile Val Trp Ile	
815 820 825	
tcc ttc atc ccc gcc tat gtc agc acc tac ggc aag ttt gtg tcg gcc	2967
Ser Phe Ile Pro Ala Tyr Val Ser Thr Tyr Gly Lys Phe Val Ser Ala	
830 835 840	
gtg gag gtg att gcc atc ctg gcc tcc agc ttc ggg ctg ctg gcc tgc	3015
Val Glu Val Ile Ala Ile Leu Ala Ser Ser Phe Gly Leu Leu Gly Cys	
845 850 855	
att tac ttc aac aag tgt tac atc atc ctg ttc aag ccg tgc cgt aac	3063
Ile Tyr Phe Asn Lys Cys Tyr Ile Ile Leu Phe Lys Pro Cys Arg Asn	
860 865 870 875	
acc atc gag gag gtg cgc tgc agc acg gcg gcc cac gcc ttc aag gtg	3111
Thr Ile Glu Glu Val Arg Cys Ser Thr Ala Ala His Ala Phe Lys Val	
880 885 890	
gcg gcc cgg gcc acc ctc cgg cgc agc gcc gcg tct cgc aag cgc tcc	3159
Ala Ala Arg Ala Thr Leu Arg Arg Ser Ala Ala Ser Arg Lys Arg Ser	
895 900 905	
agc agc ctg tgc ggc tcc acc atc tcc tcg ccc gcc tcg tcc acc tgc	3207
Ser Ser Leu Cys Gly Ser Thr Ile Ser Ser Pro Ala Ser Ser Thr Cys	
910 915 920	

FIG. 4D

ggg ccg ggc ctc acc atg gag atg cag cgc tgc agc acg cag aag gtc 3255  
 Gly Pro Gly Leu Thr Met Glu Met Gln Arg Cys Ser Thr Gln Lys Val  
 925 930 935

agc ttc ggc agc ggc acc gtc acc ctg tgc ctc agc ttc gag gag aca 3303  
 Ser Phe Gly Ser Gly Thr Val Thr Leu Ser Leu Ser Phe Glu Glu Thr  
 940 945 950 955

ggc cga tac gcc acc ctc agc cgc acg gcc cgc agc agg aac tgc ggc 3351  
 Gly Arg Tyr Ala Thr Leu Ser Arg Thr Ala Arg Ser Arg Asn Ser Ala  
 960 965 970

gat ggc cgc agc ggc gac gac ctg cca tct aga cac cac gac cag ggc 3399  
 Asp Gly Arg Ser Gly Asp Asp Leu Pro Ser Arg His His Asp Gln Gly  
 975 980 985

ccg cct cag aaa tgc gag ccc cag ccc gcc aac gat gcc cga tac aag 3447  
 Pro Pro Gln Lys Cys Glu Pro Gln Pro Ala Asn Asp Ala Arg Tyr Lys  
 990 995 1000

gcg gcg ccg acc aag ggc acc cta gag tgc ccg ggc ggc agc aag gag 3495  
 Ala Ala Pro Thr Lys Gly Thr Leu Glu Ser Pro Gly Gly Ser Lys Glu  
 1005 1010 1015

cgc ccc aca act atg gag gaa acc taa tccaactcct ccatcaaccc 3542  
 Arg Pro Thr Thr Met Glu Glu Thr \*  
 1020 1025

caagaacatc ctccacggca gcaccgtcga caactgacat caactcctaa ccggtggctg 3602  
 cccaacctct ccctctccg gcacttttgcg ttttgcagaa gattgcagca tctgcagttc 3662  
 cttttatccc tgattttctg acttgatgat ttactagtgt gcgatggaat atcacaacat 3722  
 aatgagttgc acaattaggt gagcagagtt gtgtcaaagt atctgaacta tctgaagtat 3782  
 ctgaactact ttattctctc gaattgtatt acaaacattt gaagtatttt tagtgacatt 3842  
 atgttctaac attgtcaaga taatttggtta caacatataa ggtaccacct gaagcagtga 3902  
 ctgagattgc cactgtgatg acagaactgt tttataacat ttatcattga aacctggatt 3962  
 gcaacaggaa tataatgact gtaacaaaaa aattgttgat tatcttaaaa atgcaaattg 4022  
 taatcagatg tgtaaaaattg gtaattactt ctgtacatta aatgcatatt tcttgataaa 4082  
 aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaagcggcc cgacagcaac gg 4134

FIG. 4E



aattccgttg	ctgtcggttc	agtcacaagtc	tcctccagtg	caaaatgaga	aatggtggtc	60
gccattacag	gaacatgcac	tacatctgtg	ttaatgaaat	attgtcagtt	atctgaaggt	120
tattaaaatg	tttctgcaag	gatggottca	cgagaaatca	attctgcacg	ttttccatt	180
gtcattgtat	gaataactga	ccaaagggat	gtaacaaaat	ggaacaaaagc	tgaggaccac	240
gttcaccctt	tcttgagca	tacgatcaac	cctgaaggag	atggaagact	tgaggaggaa	300
atggggattg	atcttccagg	agttctgctg	taaagcgatc	cctcaccatt	acaaagataa	360
gcagaaatcc	tccaggcatc	ctctgtaaac	gggctggcgt	agtgtggctt	ggtcaaggaa	420
cagagacagg	gctgcaca	atg gct cag	ctt cac tgc	caa ctc tta	ttc ttg	471
	Met Ala Gln	Leu His Cys	Gln Leu Leu	Phe Leu		
	1	5	10			
gga ttt aca	ctc cta cag	tcg tac aat	gtc tca ggg	tat ggt cca	aac	519
Gly Phe Thr	Leu Leu Gln	Ser Tyr Asn	Val Ser Gly	Tyr Gly Pro	Asn	
	15	20	25			
caa agg gcc	cag aag aaa	gga gac atc	ata ctg gga	ggg ctc ttc	cca	567
Gln Arg Ala	Gln Lys Lys	Gly Asp Ile	Ile Leu Gly	Gly Leu Phe	Pro	
	30	35	40			
ata cac ttt	gga gta gcc	gcc aag gat	cag gac tta	aaa tcg aga	ccg	615
Ile His Phe	Gly Val Ala	Ala Lys Asp	Gln Asp Leu	Lys Ser Arg	Pro	
	45	50	55			
gag gcg aca	aaa tgt att	cgg tac aat	ttt cga ggc	ttc cga tgg	ctc	663
Glu Ala Thr	Lys Cys Ile	Arg Tyr Asn	Phe Arg Gly	Phe Arg Trp	Leu	
	60	65	70	75		
cag gcg atg	ata ttc gca	att gaa gag	att aac aac	agt atg act	ttc	711
Gln Ala Met	Ile Phe Ala	Ile Glu Glu	Ile Asn Asn	Ser Met Thr	Phe	
	80	85	90			
ctg ccc aat	atc acc ctg	gga tat cgc	ata ttt gac	acg tgt aac	acc	759
Leu Pro Asn	Ile Thr Leu	Gly Tyr Arg	Ile Phe Asp	Thr Cys Asn	Thr	
	95	100	105			
gtg tcc aag	gcg cta gag	gca aca ctc	agc ttt gtg	gcc cag aac	aaa	807
Val Ser Lys	Ala Leu Glu	Ala Thr Leu	Ser Phe Val	Ala Gln Asn	Lys	
	110	115	120			
atc gac tcg	ctg aac tta	gat gag ttc	tgt aac tgc	tct gac cat	atc	855
Ile Asp Ser	Leu Asn Leu	Asp Glu Phe	Cys Asn Cys	Ser Asp His	Ile	
	125	130	135			
cca tcc aca	ata gca gtg	gtc ggg gca	acc ggg tca	gga atc tcc	acg	903
Pro Ser Thr	Ile Ala Val	Val Gly Ala	Thr Gly Ser	Gly Ile Ser	Thr	
	140	145	150	155		
gct gtg gcc	aat cta ttg	gga tta ttt	tac att cca	cag gtc agc	tat	951
Ala Val Ala	Asn Leu Leu	Gly Leu Phe	Tyr Ile Pro	Gln Val Ser	Tyr	
	160	165	170			
gcc tcc tcg	agc agg ctg	ctc agc aac	aag aat gag	tac aag gcc	ttc	999
Ala Ser Ser	Ser Arg Leu	Leu Ser Asn	Lys Asn Glu	Tyr Lys Ala	Phe	
	175	180	185			
ctg agg acc	atc ccc aat	gat gag caa	cag gcc acg	gcc atg gcc	gag	1047
Leu Arg Thr	Ile Pro Asn	Asp Glu Gln	Gln Ala Thr	Ala Met Ala	Glu	
	190	195	200			

FIG. 5A

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atc atc gag cac ttc cag tgg aac tgg gtg gga acc ctg gca gcc gac Ile Ile Glu His Phe Gln Trp Asn Trp Val Gly Thr Leu Ala Ala Asp 205 210 215	1095
gat gac tat ggc cgc cca ggc att gac aag ttc cgg gag gag gcc gtt Asp Asp Tyr Gly Arg Pro Gly Ile Asp Lys Phe Arg Glu Glu Ala Val 220 225 230 235	1143
aag agg gac atc tgt att gac ttc agt gag atg atc tct cag tac tac Lys Arg Asp Ile Cys Ile Asp Phe Ser Glu Met Ile Ser Gln Tyr Tyr 240 245 250	1191
acc cag aag cag ttg gag ttc atc gcc gac gtc atc cag aac tcc tcg Thr Gln Lys Gln Leu Glu Phe Ile Ala Asp Val Ile Gln Asn Ser Ser 255 260 265	1239
gcc aag gtc atc gtg gtc ttc tcc aat ggc ccc gac ctg gag ccg ctc Ala Lys Val Ile Val Val Phe Ser Asn Gly Pro Asp Leu Glu Pro Leu 270 275 280	1287
atc cag gag ata gtt cgg aga aac atc acc gat cgg atc tgg ctg gcc Ile Gln Glu Ile Val Arg Arg Asn Ile Thr Asp Arg Ile Trp Leu Ala 285 290 295	1335
agc gag gct tgg gcc agc tct tcg ctc att gcc aag cca gag tac ttc Ser Glu Ala Trp Ala Ser Ser Ser Leu Ile Ala Lys Pro Glu Tyr Phe 300 305 310 315	1383
cac gtg gtc ggc ggc acc atc ggc ttc gct ctc agg gcg ggg cgt atc His Val Val Gly Gly Thr Ile Gly Phe Ala Leu Arg Ala Gly Arg Ile 320 325 330	1431
cca ggg ttc aac aag ttc ctg aag gag gtc cac ccc agc agg tcc tcg Pro Gly Phe Asn Lys Phe Leu Lys Glu Val His Pro Ser Arg Ser Ser 335 340 345	1479
gac aat ggg ttt gtc aag gag ttc tgg gag gag acc ttc aac tgc tac Asp Asn Gly Phe Val Lys Glu Phe Trp Glu Glu Thr Phe Asn Cys Tyr 350 355 360	1527
ttc acc gag aag acc ctg acg cag ctg aag aat tcc aag gtg ccc tcg Phe Thr Glu Lys Thr Leu Thr Gln Leu Lys Asn Ser Lys Val Pro Ser 365 370 375	1575
cac gga ccg gcg gct caa ggg gac ggc tcc aag gcg ggg aac tcc aga His Gly Pro Ala Ala Gln Gly Asp Gly Ser Lys Ala Gly Asn Ser Arg 380 385 390 395	1623
cgg aca gcc cta cgc cac ccc tgc act ggg gag gag aac atc acc agc Arg Thr Ala Leu Arg His Pro Cys Thr Gly Glu Glu Asn Ile Thr Ser 400 405 410	1671
gtg gag acc ccc tac ctg gat tat aca cac ctg agg atc tcc tac aat Val Glu Thr Pro Tyr Leu Asp Tyr Thr His Leu Arg Ile Ser Tyr Asn 415 420 425	1719
gta tac gtg gcc gtc tac tcc att gct cac gcc ctg caa gac atc cac Val Tyr Val Ala Val Tyr Ser Ile Ala His Ala Leu Gln Asp Ile His 430 435 440	1767

FIG. 5B

tct tgc aaa ccc ggc acg ggc atc ttt gca aac gga tct tgt gca gat	1815
Ser Cys Lys Pro Gly Thr Gly Ile Phe Ala Asn Gly Ser Cys Ala Asp	
445 450 455	
att aaa aaa gtt gag gcc tgg cag gtc ctc aac cat ctg ctg cat ctg	1863
Ile Lys Lys Val Glu Ala Trp Gln Val Leu Asn His Leu Leu His Leu	
460 465 470 475	
aag ttt acc aac agc atg ggt gag cag gtt gac ttt gac gat caa ggt	1911
Lys Phe Thr Asn Ser Met Gly Glu Gln Val Asp Phe Asp Asp Gln Gly	
480 485 490	
gac ctc aag ggg aac tac acc att atc aac tgg cag ctc tcc gca gag	1959
Asp Leu Lys Gly Asn Tyr Thr Ile Ile Asn Trp Gln Leu Ser Ala Glu	
495 500 505	
gat gaa tcg gtg ttg ttc cat gag gtg ggc aac tac aac gcc tac gct	2007
Asp Glu Ser Val Leu Phe His Glu Val Gly Asn Tyr Asn Ala Tyr Ala	
510 515 520	
aag ccc agt gac cga ctc aac atc aac gaa aag aaa atc ctc tgg agt	2055
Lys Pro Ser Asp Arg Leu Asn Ile Asn Glu Lys Lys Ile Leu Trp Ser	
525 530 535	
ggc ttc tcc aaa gtg gtt cct ttc tcc aac tgc agt cga gac tgt gtg	2103
Gly Phe Ser Lys Val Val Pro Phe Ser Asn Cys Ser Arg Asp Cys Val	
540 545 550 555	
ccg ggc acc agg aag ggg atc atc gag ggg gag ccc acc tgc tgc ttt	2151
Pro Gly Thr Arg Lys Gly Ile Ile Glu Gly Glu Pro Thr Cys Cys Phe	
560 565 570	
gaa tgc atg gca tgt gca gag gga gag ttc agt gat gaa aac gat gca	2199
Glu Cys Met Ala Cys Ala Glu Gly Glu Phe Ser Asp Glu Asn Asp Ala	
575 580 585	
agt gcg tgt aca aag tgc ccg aat gat ttc tgg tgc aat gag aac cac	2247
Ser Ala Cys Thr Lys Cys Pro Asn Asp Phe Trp Ser Asn Glu Asn His	
590 595 600	
acg tcg tgc atc gcc aag gag atc gag tac ctg tcg tgg acg gag ccc	2295
Thr Ser Cys Ile Ala Lys Glu Ile Glu Tyr Leu Ser Trp Thr Glu Pro	
605 610 615	
ttc ggg atc gct ctg acc atc ttc gcc gta ctg ggc atc ctg atc acc	2343
Phe Gly Ile Ala Leu Thr Ile Phe Ala Val Leu Gly Ile Leu Ile Thr	
620 625 630 635	
tcc ttc gtg ctg ggg gtc ttc atc aag ttc agg aac act ccc atc gtg	2391
Ser Phe Val Leu Gly Val Phe Ile Lys Phe Arg Asn Thr Pro Ile Val	
640 645 650	
aag gcc acc aac cgg gag ttg tcc tac ctg ctg ctc ttc tcc ctc atc	2439
Lys Ala Thr Asn Arg Glu Leu Ser Tyr Leu Leu Leu Phe Ser Leu Ile	
655 660 665	
tgc tgc ttc tcc agc tcg ctc atc ttc atc ggc gag ccc agg gac tgg	2487
Cys Cys Phe Ser Ser Ser Leu Ile Phe Ile Gly Glu Pro Arg Asp Trp	
670 675 680	

FIG. 5C

acc	tgt	cgg	ctc	cgc	caa	ccg	gcc	ttt	ggc	atc	agc	ttc	gtc	ctg	tgc	2535
Thr	Cys	Arg	Leu	Arg	Gln	Pro	Ala	Phe	Gly	Ile	Ser	Phe	Val	Leu	Cys	
685						690					695					
atc	tcc	tgc	atc	ctg	gtg	aag	acc	aac	cgg	gtg	ctg	ctg	gtc	ttc	gag	2583
Ile	Ser	Cys	Ile	Leu	Val	Lys	Thr	Asn	Arg	Val	Leu	Leu	Val	Phe	Glu	
700					705					710					715	
gcc	aag	atc	ccc	acc	agc	ctc	cac	cgc	aag	tgg	gtg	ggc	ctc	aac	ctg	2631
Ala	Lys	Ile	Pro	Thr	Ser	Leu	His	Arg	Lys	Trp	Val	Gly	Leu	Asn	Leu	
				720					725					730		
cag	ttc	ctc	ctg	gtc	ttc	ctc	tgc	atc	ctg	gtg	caa	atc	gtc	acc	tgc	2679
Gln	Phe	Leu	Leu	Val	Phe	Leu	Cys	Ile	Leu	Val	Gln	Ile	Val	Thr	Cys	
			735					740					745			
atc	atc	tgg	ctc	tac	acc	gcg	cct	ccc	tcc	agc	tac	agg	aac	cat	gag	2727
Ile	Ile	Trp	Leu	Tyr	Thr	Ala	Pro	Pro	Ser	Ser	Tyr	Arg	Asn	His	Glu	
		750					755					760				
ctg	gag	gac	gag	gtc	atc	ttc	atc	acc	tgc	gac	gag	ggc	tgc	ctc	atg	2775
Leu	Glu	Asp	Glu	Val	Ile	Phe	Ile	Thr	Cys	Asp	Glu	Gly	Ser	Leu	Met	
	765					770					775					
gcg	ctg	ggc	ttc	ctc	atc	ggc	tac	acc	tgc	ctc	ctc	gcc	gcc	atc	tgc	2823
Ala	Leu	Gly	Phe	Leu	Ile	Gly	Tyr	Thr	Cys	Leu	Leu	Ala	Ala	Ile	Cys	
780					785					790					795	
ttc	ttc	ttc	gcc	ttc	aag	tcc	cgt	aag	ctg	ccg	gag	aac	ttc	aac	gag	2871
Phe	Phe	Phe	Ala	Phe	Lys	Ser	Arg	Lys	Leu	Pro	Glu	Asn	Phe	Asn	Glu	
			800						805					810		
gct	aag	ttc	atc	acc	ttc	agc	atg	ttg	atc	ttc	ttc	atc	gtc	tgg	atc	2919
Ala	Lys	Phe	Ile	Thr	Phe	Ser	Met	Leu	Ile	Phe	Phe	Ile	Val	Trp	Ile	
			815					820					825			
tcc	ttc	atc	ccc	gcc	tat	gtc	agc	acc	tac	ggc	aag	ttt	gtg	tgc	gcc	2967
Ser	Phe	Ile	Pro	Ala	Tyr	Val	Ser	Thr	Tyr	Gly	Lys	Phe	Val	Ser	Ala	
		830					835					840				
gtg	gag	gtg	att	gcc	atc	ctg	gcc	tcc	agc	ttc	ggg	ctg	ctg	ggc	tgc	3015
Val	Glu	Val	Ile	Ala	Ile	Leu	Ala	Ser	Ser	Phe	Gly	Leu	Leu	Gly	Cys	
	845					850					855					
att	tac	ttc	aac	aag	tgt	tac	atc	atc	ctg	ttc	aag	ccg	tgc	cgt	aac	3063
Ile	Tyr	Phe	Asn	Lys	Cys	Tyr	Ile	Ile	Leu	Phe	Lys	Pro	Cys	Arg	Asn	
860					865				870						875	
acc	atc	gag	gag	gtg	cgc	tgc	agc	acg	gcg	gcc	cac	gcc	ttc	aag	gtg	3111
Thr	Ile	Glu	Glu	Val	Arg	Cys	Ser	Thr	Ala	Ala	His	Ala	Phe	Lys	Val	
				880					885					890		
gcg	gcc	cgg	gcc	acc	ctc	cgg	cgc	agc	gcc	gcg	tct	cgc	aag	cgc	tcc	3159
Ala	Ala	Arg	Ala	Thr	Leu	Arg	Arg	Ser	Ala	Ala	Ser	Arg	Lys	Arg	Ser	
			895					900					905			
agc	agc	ctg	tgc	ggc	tcc	acc	atc	tcc	tgc	ccc	gcc	tgc	tcc	acc	tgc	3207
Ser	Ser	Leu	Cys	Gly	Ser	Thr	Ile	Ser	Ser	Pro	Ala	Ser	Ser	Thr	Cys	
		910					915					920				

FIG. 5D

10015496-121001

ggg ccg ggc ctc acc atg gag atg cag cgc tgc agc acg cag aag gtc	3255
Gly Pro Gly Leu Thr Met Glu Met Gln Arg Cys Ser Thr Gln Lys Val	
925 930 935	
agc ttc ggc agc ggc acc gtc acc ctg tgc ctc agc ttc gag gag aca	3303
Ser Phe Gly Ser Gly Thr Val Thr Leu Ser Leu Ser Phe Glu Glu Thr	
940 945 950 955	
ggc cga tac gcc acc ctc agc cgc acg gcc cgc agc agg aac tgc gcg	3351
Gly Arg Tyr Ala Thr Leu Ser Arg Thr Ala Arg Ser Arg Asn Ser Ala	
960 965 970	
gat ggc cgc agc ggc gac gac ctg cca tct aga cac cac gac cag ggc	3399
Asp Gly Arg Ser Gly Asp Asp Leu Pro Ser Arg His His Asp Gln Gly	
975 980 985	
ccg cct cag aaa tgc gag ccc cag ccc gcc aac gat gcc cga tac aag	3447
Pro Pro Gln Lys Cys Glu Pro Gln Pro Ala Asn Asp Ala Arg Tyr Lys	
990 995 1000	
gcg gcg ccg acc aag ggc acc cta gag tgc ccg ggc ggc agc aag gag	3495
Ala Ala Pro Thr Lys Gly Thr Leu Glu Ser Pro Gly Gly Ser Lys Glu	
1005 1010 1015	
cgc ccc aca act atg gag gaa acc taa tccaactcct ccatcaaccc	3542
Arg Pro Thr Thr Met Glu Glu Thr *	
1020 1025	
caagaacatc ctccacggca gcaccgtcga caactgacat caactcctaa ccggtggctg	3602
cccaacctct cccctctccg gcacttttgcg ttttgctgaa gattgcagca tctgcagttc	3662
cttttatccc tgatttttctg acttgatgat ttactagtgt gcgatggaat atcacaacat	3722
aatgagttgc acaattaggt gagcagagtt gtgtcaaagt atctgaacta tctgaagtat	3782
ctgaactact ttattctctc gaattgtatt acaaacattt gaagtattct tagtgacatt	3842
atgttctaac attgtcaaga taatttggtta caacatataa ggtaccacct gaagcagtga	3902
ctgagattgc cactgtgatg acagaactgt tttataacat ttatcattga aacctggatt	3962
gcaacaggaa tataatgact gtaacaaaaa aattggtgat tatcttaaaa atgcaaattg	4022
taatcagatg tgtaaaattg gtaattactt ctgtacatta aatgcatatt tcttgataaa	4082
aaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaagcggcc cgacagcaac gg	4134

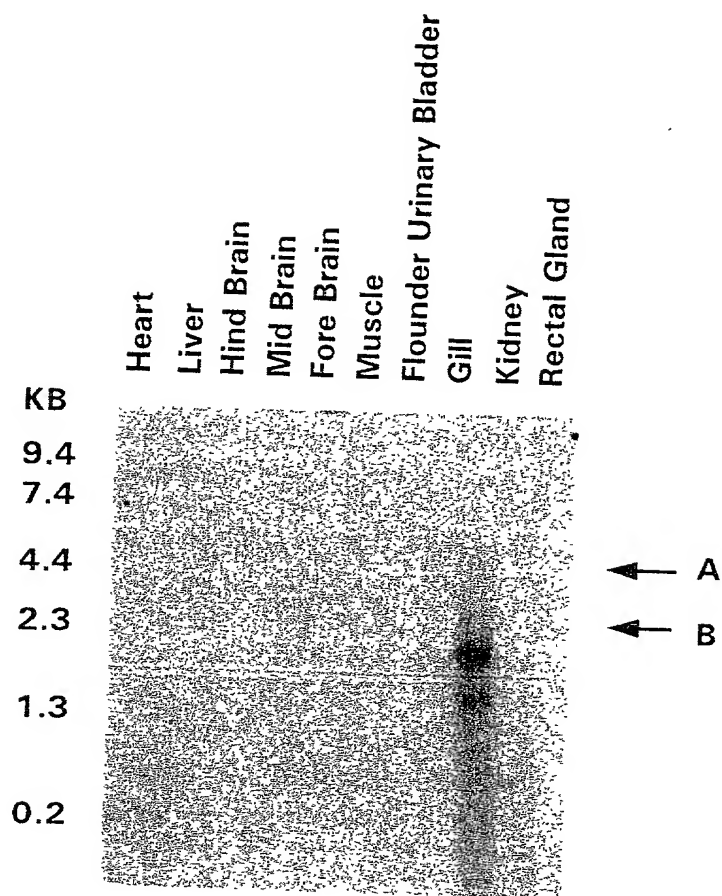


FIG.6

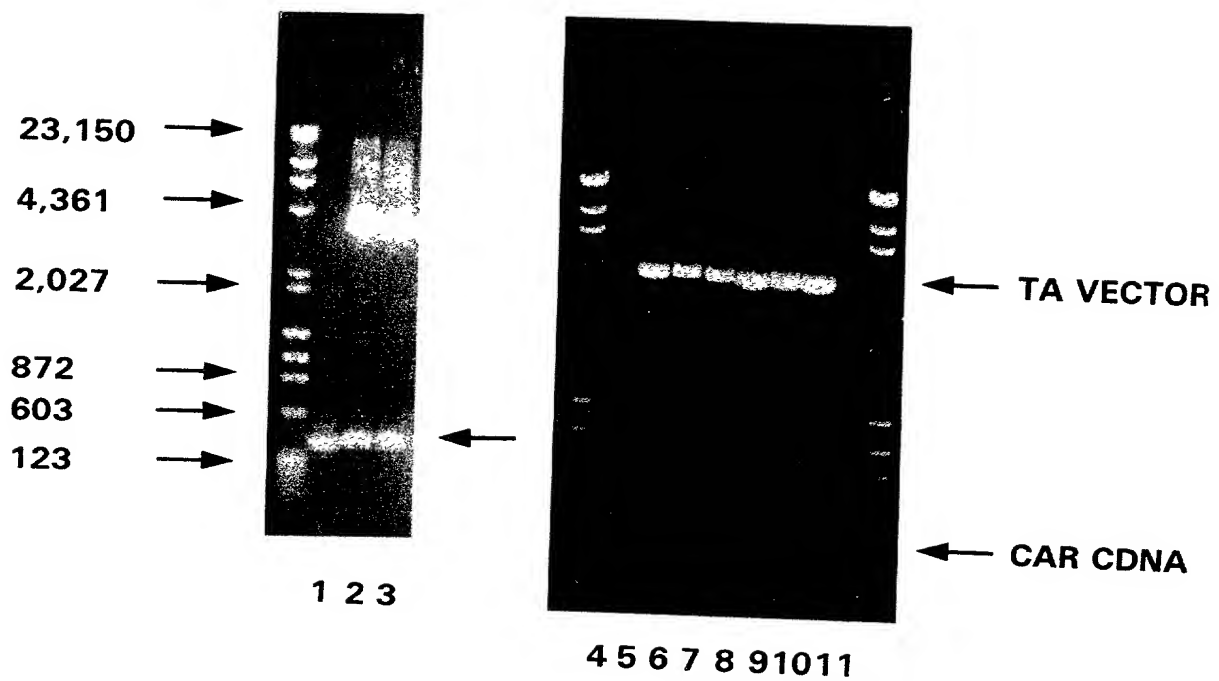


FIG. 7A

FIG. 7B

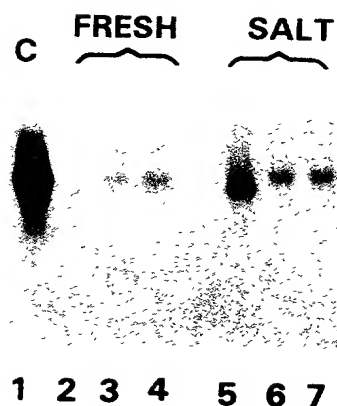


FIG.8

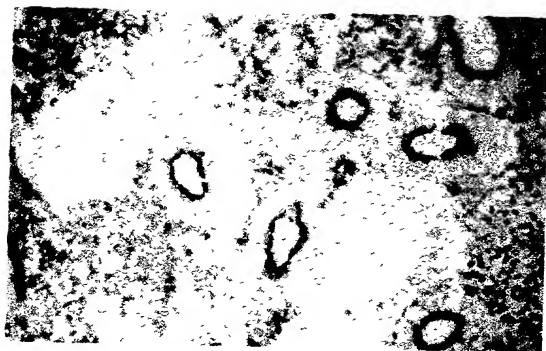


FIG.9A

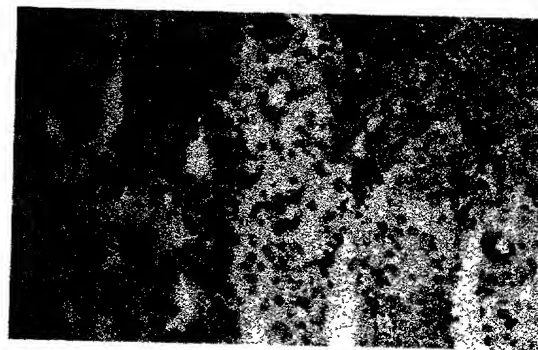


FIG.9B



FIG.9C

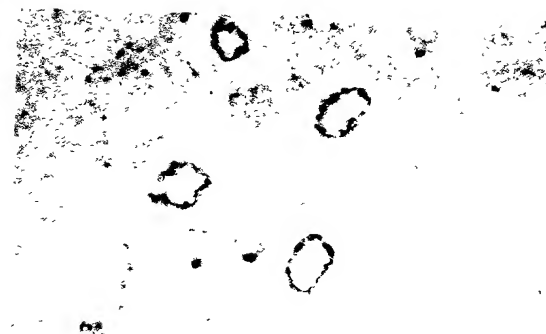


FIG.9D



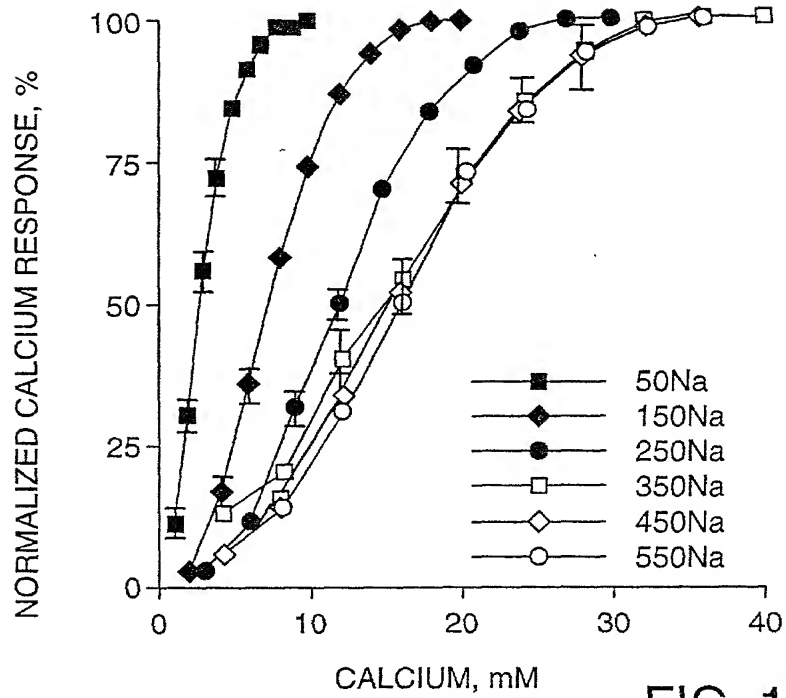


FIG. 10

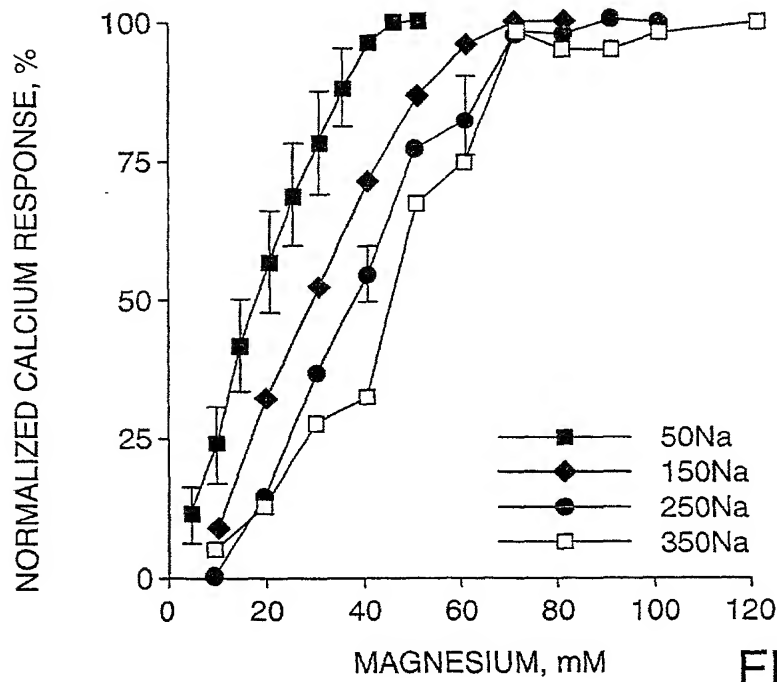


FIG. 11

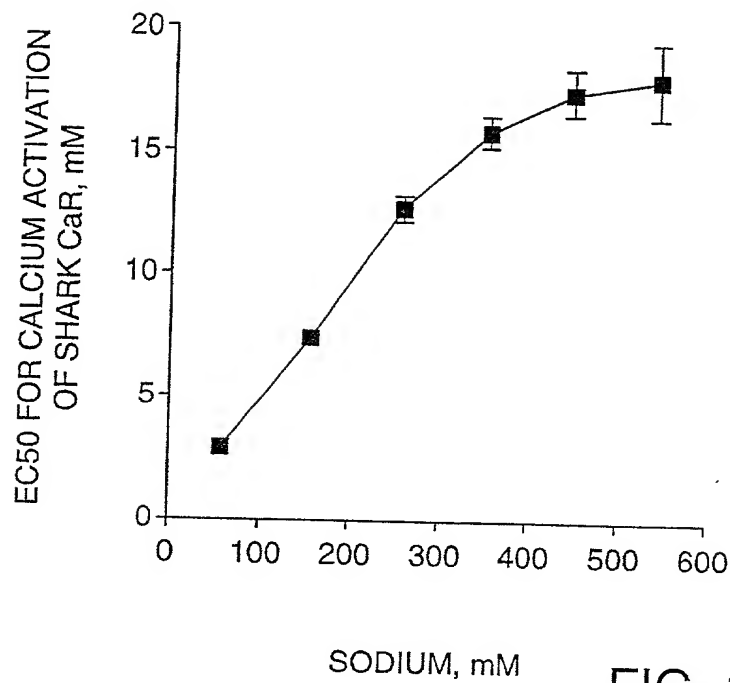


FIG. 12

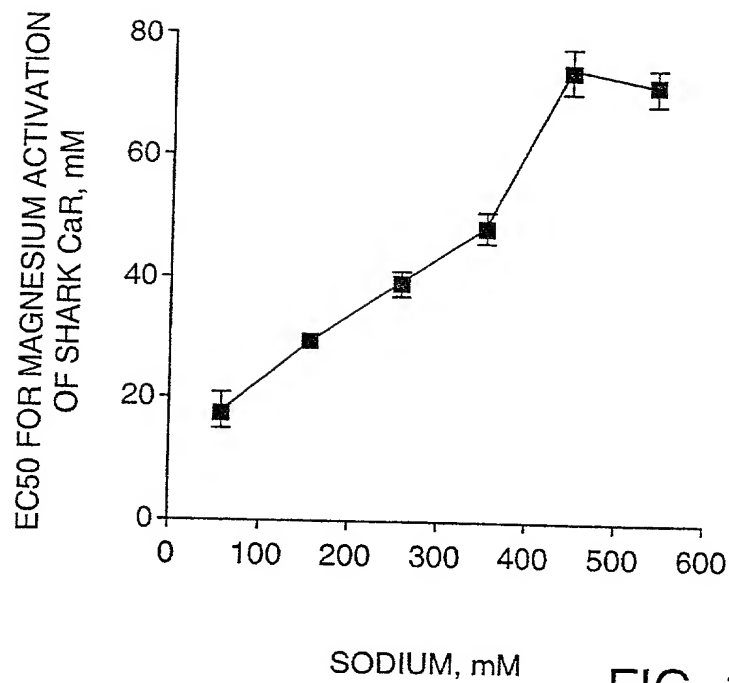


FIG. 13

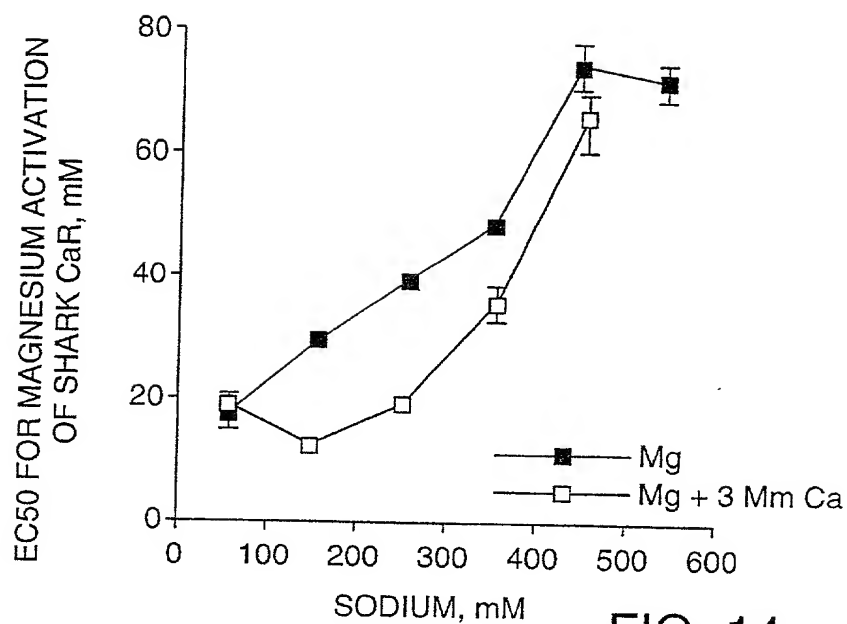


FIG. 14

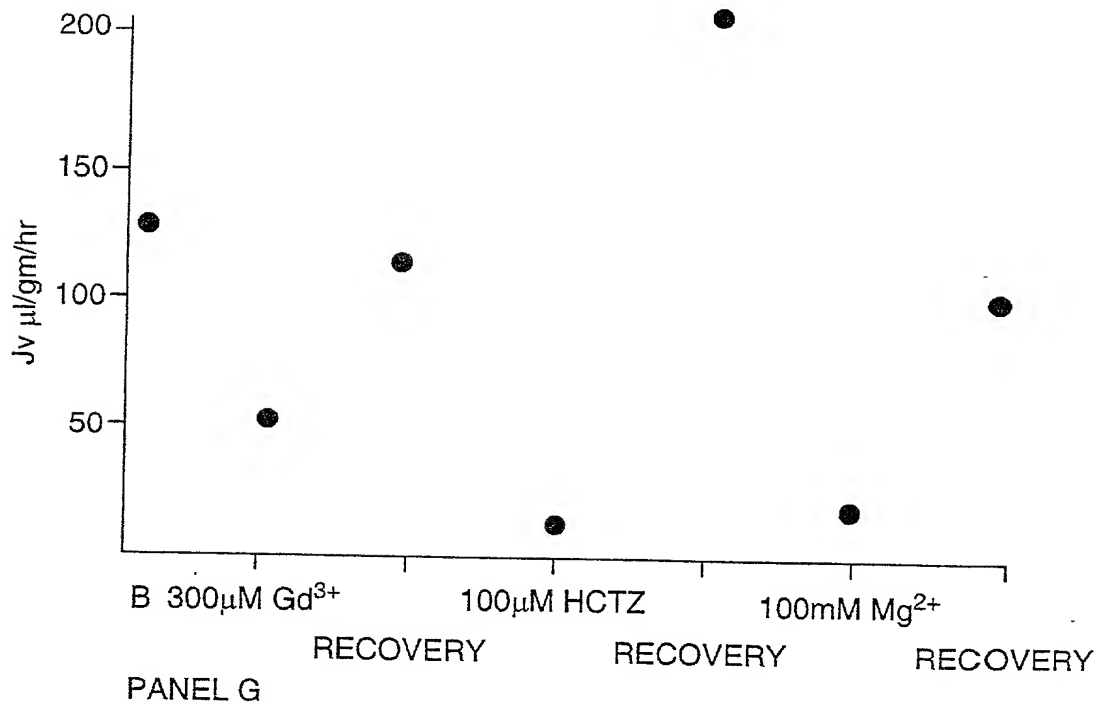


FIG. 15

cta cta gtc ata tgg att gcg gcg gay gay gat tat ggc cgc cca ggg Leu Leu Val Ile Trp Ile Ala Ala Asp Asp Tyr Gly Arg Pro Gly 1 5 10 15	48
ata gat aag ttt cga gaa gaa gct gaa gag agg gac atc tgc ata gat Ile Asp Lys Phe Arg Glu Glu Ala Glu Glu Arg Asp Ile Cys Ile Asp 20 25 30	96
ttc aat gag atg att tct cag tac tat aca caa aaa gag ctg gag ttt Phe Asn Glu Met Ile Ser Gln Tyr Tyr Thr Gln Lys Glu Leu Glu Phe 35 40 45	144
att gca gat act att cag aat tcc tca gcc aaa gtg att gty gtc ttc Ile Ala Asp Thr Ile Gln Asn Ser Ser Ala Lys Val Ile Xaa Val Phe 50 55 60	192
tca aat ggc cct gac ttg gaa cca cta ata caa gag ata gtt cga cgg Ser Asn Gly Pro Asp Leu Glu Pro Leu Ile Gln Glu Ile Val Arg Arg 65 70 75 80	240
aac ata act gat aga ata tgg cta gca agt gaa gcg tgg gct agt tcc Asn Ile Thr Asp Arg Ile Trp Leu Ala Ser Glu Ala Trp Ala Ser Ser 85 90 95	288
tca ctg ata gcc aaa cca gaa tac ttc cat gtt gtt ggt gga acc att Ser Leu Ile Ala Lys Pro Glu Tyr Phe His Val Val Gly Gly Thr Ile 100 105 110	336
gga ttt gca cta aga gca gga cgc atc cca gga ttc cat gag ttt tta Gly Phe Ala Leu Arg Ala Gly Arg Ile Pro Gly Phe His Glu Phe Leu 115 120 125	384
aaa aag gtc cat ccc agc agg tcc tcc cac aat ggc ttt gtc aag gaa Lys Lys Val His Pro Ser Arg Ser Ser His Asn Gly Phe Val Lys Glu 130 135 140	432
ttc tgg gaa gaa aca ttt aat tgt tat ttc act gaa gaa tcc cta aca Phe Trp Glu Glu Thr Phe Asn Cys Tyr Phe Thr Glu Glu Ser Leu Thr 145 150 155 160	480
caa cta aag aat tgc aaa aca cca acc cat gga tta gca atg cac aat Gln Leu Lys Asn Cys Lys Thr Pro Thr His Gly Leu Ala Met His Asn 165 170 175	528
gac agt gcg aaa atg ggg cat tcc aca agg aca acg tta cga cct cca Asp Ser Ala Lys Met Gly His Ser Thr Arg Thr Thr Leu Arg Pro Pro 180 185 190	576

FIG. 16A

tgc act gga gaa gag aat atc acg agt gtg gag acc cct tac ctg gat	624
Cys Thr Gly Glu Glu Asn Ile Thr Ser Val Glu Thr Pro Tyr Leu Asp	
195 200 205	
tat act cac ctc cgt att tca tat aat gtg tat gtg gca gtg tat tcg	672
Tyr Thr His Leu Arg Ile Ser Tyr Asn Val Tyr Val Ala Val Tyr Ser	
210 215 220	
att gct cac gct ctg cag gac atc tat gcc tgc aca cct ggg aag ggg	720
Ile Ala His Ala Leu Gln Asp Ile Tyr Ala Cys Thr Pro Gly Lys Gly	
225 230 235 240	
att ttt gcg aac gga tca tgt gcc gat atc aaa aaa gtc gaa gcc tgg	768
Ile Phe Ala Asn Gly Ser Cys Ala Asp Ile Lys Lys Val Glu Ala Trp	
245 250 255	
aat cca tat gac tag t	784
Asn Pro Tyr Asp *	
260	

FIG. 16B

Leu	Leu	Val	Ile	Trp	Ile	Ala	Ala	Asp	Asp	Asp	Tyr	Gly	Arg	Pro	Gly
1				5					10					15	
Ile	Asp	Lys	Phe	Arg	Glu	Glu	Ala	Glu	Glu	Arg	Asp	Ile	Cys	Ile	Asp
			20					25					30		
Phe	Asn	Glu	Met	Ile	Ser	Gln	Tyr	Tyr	Thr	Gln	Lys	Glu	Leu	Glu	Phe
		35					40					45			
Ile	Ala	Asp	Thr	Ile	Gln	Asn	Ser	Ser	Ala	Lys	Val	Ile	Val	Val	Phe
	50					55					60				
Ser	Asn	Gly	Pro	Asp	Leu	Glu	Pro	Leu	Ile	Gln	Glu	Ile	Val	Arg	Arg
65					70					75				80	
Asn	Ile	Thr	Asp	Arg	Ile	Trp	Leu	Ala	Ser	Glu	Ala	Trp	Ala	Ser	Ser
				85					90					95	
Ser	Leu	Ile	Ala	Lys	Pro	Glu	Tyr	Phe	His	Val	Val	Gly	Gly	Thr	Ile
			100					105					110		
Gly	Phe	Ala	Leu	Arg	Ala	Gly	Arg	Ile	Pro	Gly	Phe	His	Glu	Phe	Leu
		115					120					125			
Lys	Lys	Val	His	Pro	Ser	Arg	Ser	Ser	His	Asn	Gly	Phe	Val	Lys	Glu
	130					135					140				
Phe	Trp	Glu	Glu	Thr	Phe	Asn	Cys	Tyr	Phe	Thr	Glu	Glu	Ser	Leu	Thr
145					150					155					160
Gln	Leu	Lys	Asn	Cys	Lys	Thr	Pro	Thr	His	Gly	Leu	Ala	Met	His	Asn
				165					170					175	
Asp	Ser	Ala	Lys	Met	Gly	His	Ser	Thr	Arg	Thr	Thr	Leu	Arg	Pro	Pro
			180					185					190		
Cys	Thr	Gly	Glu	Glu	Asn	Ile	Thr	Ser	Val	Glu	Thr	Pro	Tyr	Leu	Asp
		195				200						205			
Tyr	Thr	His	Leu	Arg	Ile	Ser	Tyr	Asn	Val	Tyr	Val	Ala	Val	Tyr	Ser
	210					215						220			
Ile	Ala	His	Ala	Leu	Gln	Asp	Ile	Tyr	Ala	Cys	Thr	Pro	Gly	Lys	Gly
225					230					235					240
Ile	Phe	Ala	Asn	Gly	Ser	Cys	Ala	Asp	Ile	Lys	Lys	Val	Glu	Ala	Trp
				245					250					255	
Asn	Pro	Tyr	Asp												
			260												

FIG. 17

10                      20                      30                      40                      50  
   \*                      \*                      \*                      \*                      \*  
 CTA CTA GTC ATA TGG ATT GCG GCG GAY GAY GAT TAT GGC CGC CCA GGG ATA GAT  
 GAT GAT CAG TAT ACC TAA CGC CGC CTR CTR CTA ATA CCG GCG GGT CCC TAT CTA  
 Leu Leu Val Ile Trp Ile Ala Ala Asp Asp Asp Tyr Gly Arg Pro Gly Ile Asp>  
 \_ \_ \_ \_ \_ a \_ \_ \_ \_ \_ a \_ \_ \_ \_ \_ a \_ \_ \_ \_ \_ ORF RF[1] \_ \_ \_ \_ \_ a \_ \_ \_ \_ \_ a \_ \_ \_ \_ \_ a \_ \_ \_ \_ \_ >

60                      70                      80                      90                      100  
   \*                      \*                      \*                      \*                      \*  
 AAG TTT CGA GAA GAA GCT GAA GAG AGG GAC ATC TGC ATA GAT TTC AAT GAG ATG  
 TTC AAA GCT CTT CTT CGA CTT CTC TCC CTG TAG ACG TAT CTA AAG TTA CTC TAC  
 Lys Phe Arg Glu Glu Ala Glu Glu Arg Asp Ile Cys Ile Asp Phe Asn Glu Met>  
 \_ \_ \_ \_ \_ a \_ \_ \_ \_ \_ a \_ \_ \_ \_ \_ a \_ \_ \_ \_ \_ ORF RF[1] \_ \_ \_ \_ \_ a \_ \_ \_ \_ \_ a \_ \_ \_ \_ \_ a \_ \_ \_ \_ \_ >

110                      120                      130                      140                      150                      160  
   \*                      \*                      \*                      \*                      \*                      \*  
 ATT TCT CAG TAC TAT ACA CAA AAA GAG CTG GAG TTT ATT GCA GAT ACT ATT CAG  
 TAA AGA GTC ATG ATA TGT GTT TTT CTC GAC CTC AAA TAA CGT CTA TGA TAA GTC  
 Ile Ser Gln Tyr Tyr Thr Gln Lys Glu Leu Glu Phe Ile Ala Asp Thr Ile Gln>  
 \_ \_ \_ \_ \_ a \_ \_ \_ \_ \_ a \_ \_ \_ \_ \_ a \_ \_ \_ \_ \_ ORF RF[1] \_ \_ \_ \_ \_ a \_ \_ \_ \_ \_ a \_ \_ \_ \_ \_ a \_ \_ \_ \_ \_ >

170                      180                      190                      200                      210  
   \*                      \*                      \*                      \*                      \*  
 AAT TCC TCA GCC AAA GTG ATT GTY GTC TTC TCA AAT GGC CCT GAC TTG GAA CCA  
 TTA AGG AGT CGG TTT CAC TAA CAG CAG AAG AGT TTA CCG GGA CTG AAC CTT GGT  
 Asn Ser Ser Ala Lys Val Ile Val Val Phe Ser Asn Gly Pro Asp Leu Glu Pro>  
 \_ \_ \_ \_ \_ a \_ \_ \_ \_ \_ a \_ \_ \_ \_ \_ a \_ \_ \_ \_ \_ ORF RF[1] \_ \_ \_ \_ \_ a \_ \_ \_ \_ \_ a \_ \_ \_ \_ \_ a \_ \_ \_ \_ \_ >

220                      230                      240                      250                      260                      270  
   \*                      \*                      \*                      \*                      \*                      \*  
 CTA ATA CAA GAG ATA GTT CGA CGG AAC ATA ACT GAT AGA ATA TGG CTA GCA AGT  
 GAT TAT GTT CTC TAT CAA GCT GCC TTG TAT TGA CTA TCT TAT ACC GAT CGT TCA  
 Leu Ile Gln Glu Ile Val Arg Arg Asn Ile Thr Asp Arg Ile Trp Leu Ala Ser>  
 \_ \_ \_ \_ \_ a \_ \_ \_ \_ \_ a \_ \_ \_ \_ \_ a \_ \_ \_ \_ \_ ORF RF[1] \_ \_ \_ \_ \_ a \_ \_ \_ \_ \_ a \_ \_ \_ \_ \_ a \_ \_ \_ \_ \_ >

280                      290                      300                      310                      320  
   \*                      \*                      \*                      \*                      \*  
 GAA GCG TGG GCT AGT TCC TCA CTG ATA GCC AAA CCA GAA TAC TTC CAT GTT GTT  
 CTT CGC ACC CGA TCA AGG AGT GAC TAT CGG TTT GGT CTT ATG AAG GTA CAA CAA  
 Glu Ala Trp Ala Ser Ser Ser Leu Ile Ala Lys Pro Glu Tyr Phe His Val Val>  
 \_ \_ \_ \_ \_ a \_ \_ \_ \_ \_ a \_ \_ \_ \_ \_ a \_ \_ \_ \_ \_ ORF RF[1] \_ \_ \_ \_ \_ a \_ \_ \_ \_ \_ a \_ \_ \_ \_ \_ a \_ \_ \_ \_ \_ >

330                      340                      350                      360                      370  
   \*                      \*                      \*                      \*                      \*  
 GGT GGA ACC ATT GGA TTT GCA CTA AGA GCA GGA CGC ATC CCA GGA TTC CAT GAG  
 CCA CCT TGG TAA CCT AAA CGT GAT TCT CGT CCT GCG TAG GGT CCT AAG GTA CTC  
 Gly Gly Thr Ile Gly Phe Ala Leu Arg Ala Gly Arg Ile Pro Gly Phe His Glu>  
 \_ \_ \_ \_ \_ a \_ \_ \_ \_ \_ a \_ \_ \_ \_ \_ a \_ \_ \_ \_ \_ ORF RF[1] \_ \_ \_ \_ \_ a \_ \_ \_ \_ \_ a \_ \_ \_ \_ \_ a \_ \_ \_ \_ \_ >

380                      390                      400                      410                      420                      430  
   \*                      \*                      \*                      \*                      \*                      \*  
 TTT TTA AAA AAG GTC CAT CCC AGC AGG TCC TCC CAC AAT GGC TTT GTC AAG GAA  
 AAA AAT TTT TTC CAG GTA GGG TCG TCC AGG AGG GTG TTA CCG AAA CAG TTC CTT  
 Phe Leu Lys Lys Val His Pro Ser Arg Ser Ser His Asn Gly Phe Val Lys Glu>  
 \_ \_ \_ \_ \_ a \_ \_ \_ \_ \_ a \_ \_ \_ \_ \_ a \_ \_ \_ \_ \_ ORF RF[1] \_ \_ \_ \_ \_ a \_ \_ \_ \_ \_ a \_ \_ \_ \_ \_ a \_ \_ \_ \_ \_ >

440                      450                      460                      470                      480  
   \*                      \*                      \*                      \*                      \*  
 TTC TGG GAA GAA ACA TTT AAT TGT TAT TTC ACT GAA GAA TCC CTA ACA CAA CTA  
 AAG ACC CTT CTT TGT AAA TTA ACA ATA AAG TGA CTT CTT AGG GAT TGT GTT GAT  
 Phe Trp Glu Glu Thr Phe Asn Cys Tyr Phe Thr Glu Glu Ser Leu Thr Gln Leu>  
 \_ \_ \_ \_ \_ a \_ \_ \_ \_ \_ a \_ \_ \_ \_ \_ a \_ \_ \_ \_ \_ ORF RF[1] \_ \_ \_ \_ \_ a \_ \_ \_ \_ \_ a \_ \_ \_ \_ \_ a \_ \_ \_ \_ \_ >

FIG. 18A

10016496.12001

# DOJFBI

FIG. 18B



tt	ctg	aca	ata	ttt	gct	gtg	cta	gga	ata	ctg	atc	act	tcc	ttt	gtt	47
Leu	Thr	Ile	Phe	Ala	Val	Leu	Gly	Ile	Leu	Ile	Thr	Ser	Phe	Val		
1				5					10					15		
ttg	gga	gta	ttc	att	aag	ttc	aga	aat	act	cct	att	gtg	aaa	gcc	act	95
Leu	Gly	Val	Phe	Ile	Lys	Phe	Arg	Asn	Thr	Pro	Ile	Val	Lys	Ala	Thr	
				20					25					30		
aac	aga	gaa	ctc	tcc	tat	ctc	ctc	ctc	ttc	tcc	tta	atc	tgc	tgt	ttc	143
Asn	Arg	Glu	Leu	Ser	Tyr	Leu	Leu	Leu	Phe	Ser	Leu	Ile	Cys	Cys	Phe	
			35					40					45			
tcc	agc	tca	ttg	atc	ttc	att	gga	gaa	ccc	aaa	gat	tgg	acc	tgc	aga	191
Ser	Ser	Ser	Leu	Ile	Phe	Ile	Gly	Glu	Pro	Lys	Asp	Trp	Thr	Cys	Arg	
			50				55					60				
ctg	cgt	caa	cct	gca	ttt	gga	atc	agc	ttt	gtg	ctg	tgc	att	tct	tgc	239
Leu	Arg	Gln	Pro	Ala	Phe	Gly	Ile	Ser	Phe	Val	Leu	Cys	Ile	Ser	Cys	
	65					70					75					
att	ctg	gtg	aaa	act	aat	cgt	gtg	cta	ttg	gtc	ttt	gag	gcc	aag	atc	287
Ile	Leu	Val	Lys	Thr	Asn	Arg	Val	Leu	Leu	Val	Phe	Glu	Ala	Lys	Ile	
	80				85					90					95	
cca	act	agc	ctc	cat	cga	aag	tgg	gtg	ggc	ctc	aat	ttg	caa	ttc	tta	335
Pro	Thr	Ser	Leu	His	Arg	Lys	Trp	Val	Gly	Leu	Asn	Leu	Gln	Phe	Leu	
				100					105					110		
ctg	gtt	ttc	ctc	tgt	att	ctt	gtg	caa	att	gtt	act	tgt	gtc	atc	tgg	383
Leu	Val	Phe	Leu	Cys	Ile	Leu	Val	Gln	Ile	Val	Thr	Cys	Val	Ile	Trp	
			115				120						125			
ctt	tac	aca	gca	ccc	cct	tcg	agc	tac	aga	aat	cat	gaa	cta	gaa	gat	431
Leu	Tyr	Thr	Ala	Pro	Pro	Ser	Ser	Tyr	Arg	Asn	His	Glu	Leu	Glu	Asp	
			130				135					140				
gaa	atc	att	ttt	att	aca	tgt	gat	gaa	ggc	tcc	tta	atg	gca	ctt	ggc	479
Glu	Ile	Ile	Phe	Ile	Thr	Cys	Asp	Glu	Gly	Ser	Leu	Met	Ala	Leu	Gly	
	145					150				155						
ttt	ctc	att	ggc	tac	aca	tgc	ctc	ctt	gct	gcc	att	tgc	ttc	ttt	ttt	527
Phe	Leu	Ile	Gly	Tyr	Thr	Cys	Leu	Leu	Ala	Ala	Ile	Cys	Phe	Phe	Phe	
160					165					170					175	
gcc	ttt	aag	tct	cgc	aaa	ctc	cca	gag	aac	ttc	aat	gag	gcc	aaa	ttt	575
Ala	Phe	Lys	Ser	Arg	Lys	Leu	Pro	Glu	Asn	Phe	Asn	Glu	Ala	Lys	Phe	
				180					185					190		
att	acc	ttc	agc	atg	ctg	ata	tt									598
Ile	Thr	Phe	Ser	Met	Leu	Ile										
			195													

FIG. 19

10016496-1001

Leu	Thr	Ile	Phe	Ala	Val	Leu	Gly	Ile	Leu	Ile	Thr	Ser	Phe	Val	Leu
1				5					10					15	
Gly	Val	Phe	Ile	Lys	Phe	Arg	Asn	Thr	Pro	Ile	Val	Lys	Ala	Thr	Asn
			20					25					30		
Arg	Glu	Leu	Ser	Tyr	Leu	Leu	Leu	Phe	Ser	Leu	Ile	Cys	Cys	Phe	Ser
		35					40					45			
Ser	Ser	Leu	Ile	Phe	Ile	Gly	Glu	Pro	Lys	Asp	Trp	Thr	Cys	Arg	Leu
	50					55					60				
Arg	Gln	Pro	Ala	Phe	Gly	Ile	Ser	Phe	Val	Leu	Cys	Ile	Ser	Cys	Ile
65					70					75					80
Leu	Val	Lys	Thr	Asn	Arg	Val	Leu	Leu	Val	Phe	Glu	Ala	Lys	Ile	Pro
				85					90					95	
Thr	Ser	Leu	His	Arg	Lys	Trp	Val	Gly	Leu	Asn	Leu	Gln	Phe	Leu	Leu
			100					105					110		
Val	Phe	Leu	Cys	Ile	Leu	Val	Gln	Ile	Val	Thr	Cys	Val	Ile	Trp	Leu
		115					120					125			
Tyr	Thr	Ala	Pro	Pro	Ser	Ser	Tyr	Arg	Asn	His	Glu	Leu	Glu	Asp	Glu
	130					135					140				
Ile	Ile	Phe	Ile	Thr	Cys	Asp	Glu	Gly	Ser	Leu	Met	Ala	Leu	Gly	Phe
145					150					155					160
Leu	Ile	Gly	Tyr	Thr	Cys	Leu	Leu	Ala	Ala	Ile	Cys	Phe	Phe	Phe	Ala
				165					170					175	
Phe	Lys	Ser	Arg	Lys	Leu	Pro	Glu	Asn	Phe	Asn	Glu	Ala	Lys	Phe	Ile
			180					185					190		
Thr	Phe	Ser	Met	Leu	Ile										
		195													

FIG. 20

10016496-1001

FIG. 21A

[illegible]

# BOOKS

FIG. 21B

g	ttg	acc	ata	tgt	gca	gtg	ctg	ggg	gtt	gcc	ytg	acg	ggc	ttc	gtg	atg	49
Leu	Thr	Ile	Cys	Ala	Val	Leu	Gly	Val	Ala	Xaa	Thr	Gly	Phe	Val	Met		
1					5				10					15			
gcc	gtc	ttt	gtc	cga	ttc	cgc	aac	acc	cca	ata	gtg	aaa	gcc	acg	aac	97	
Ala	Val	Phe	Val	Arg	Phe	Arg	Asn	Thr	Pro	Ile	Val	Lys	Ala	Thr	Asn		
			20					25					30				
cga	gaa	ctg	tcc	tac	gtc	ctc	ctg	ttc	tct	ctc	atc	tgt	tgc	ttc	tcc	145	
Arg	Glu	Leu	Ser	Tyr	Val	Leu	Leu	Phe	Ser	Leu	Ile	Cys	Cys	Phe	Ser		
			35				40					45					
agc	tcc	ctc	atc	ttc	ata	gga	gag	ccg	cag	gat	tgg	atg	tgc	cgc	tta	193	
Ser	Ser	Leu	Ile	Phe	Ile	Gly	Glu	Pro	Gln	Asp	Trp	Met	Cys	Arg	Leu		
	50					55					60						
cgc	caa	ccg	gcc	ttt	ggg	atc	agt	ttt	gtt	ctc	tgt	atc	tcg	tgc	atc	241	
Arg	Gln	Pro	Ala	Phe	Gly	Ile	Ser	Phe	Val	Leu	Cys	Ile	Ser	Cys	Ile		
65					70					75					80		
ctt	gtg	aaa	aca	aac	cka	gtc	ctc	ttg	gtg	ttt	gaa	gcc	aag	atc	ccg	289	
Leu	Val	Lys	Thr	Asn	Xaa	Val	Leu	Leu	Val	Phe	Glu	Ala	Lys	Ile	Pro		
				85					90					95			
aca	agt	ctc	cat	cgt	aaa	tgg	tgg	ggg	tta	aac	cta	cag	ttc	ctg	ctg	337	
Thr	Ser	Leu	His	Arg	Lys	Trp	Trp	Gly	Leu	Asn	Leu	Gln	Phe	Leu	Leu		
			100					105					110				
gtg	ttt	ctg	tgc	aca	ttt	gtc	caa	gtc	atg	ata	tgt	gtg	gtc	tgg	ctg	385	
Val	Phe	Leu	Cys	Thr	Phe	Val	Gln	Val	Met	Ile	Cys	Val	Val	Trp	Leu		
		115					120					125					
tac	aac	gcc	cca	cct	tcc	agt	tac	agg	aac	tat	gac	ata	gat	gag	atg	433	
Tyr	Asn	Ala	Pro	Pro	Ser	Ser	Tyr	Arg	Asn	Tyr	Asp	Ile	Asp	Glu	Met		
	130					135					140						
att	ttt	atc	aca	tgt	aac	gaa	ggc	tct	gta	atg	gct	ctt	ggg	ttt	ctt	481	
Ile	Phe	Ile	Thr	Cys	Asn	Glu	Gly	Ser	Val	Met	Ala	Leu	Gly	Phe	Leu		
145					150					155					160		
att	ggc	tat	aca	tgc	ctg	ctg	gcc	gct	ata	tgt	ttc	ttc	ttt	gca	ttc	529	
Ile	Gly	Tyr	Thr	Cys	Leu	Leu	Ala	Ala	Ile	Cys	Phe	Phe	Phe	Ala	Phe		
				165				170						175			
aaa	tca	cgg	aaa	ctt	cca	gaa	aac	ttc	acc	gag	gct	aag	ttc	atc	act	577	
Lys	Ser	Arg	Lys	Leu	Pro	Glu	Asn	Phe	Thr	Glu	Ala	Lys	Phe	Ile	Thr		
			180					185					190				
ttt	agt	atg	ctc	ata	tt											594	
Phe	Ser	Met	Leu	Ile													
			195														

FIG. 22

10015495-13001

Leu	Thr	Ile	Cys	Ala	Val	Leu	Gly	Val	Ala	Leu	Thr	Gly	Phe	Val	Met
1				5					10					15	
Ala	Val	Phe	Val	Arg	Phe	Arg	Asn	Thr	Pro	Ile	Val	Lys	Ala	Thr	Asn
			20					25					30		
Arg	Glu	Leu	Ser	Tyr	Val	Leu	Leu	Phe	Ser	Leu	Ile	Cys	Cys	Phe	Ser
		35					40					45			
Ser	Ser	Leu	Ile	Phe	Ile	Gly	Glu	Pro	Gln	Asp	Trp	Met	Cys	Arg	Leu
		50				55					60				
Arg	Gln	Pro	Ala	Phe	Gly	Ile	Ser	Phe	Val	Leu	Cys	Ile	Ser	Cys	Ile
65					70					75					80
Leu	Val	Lys	Thr	Asn	Xaa	Val	Leu	Leu	Val	Phe	Glu	Ala	Lys	Ile	Pro
				85					90					95	
Thr	Ser	Leu	His	Arg	Lys	Trp	Trp	Gly	Leu	Asn	Leu	Gln	Phe	Leu	Leu
			100					105					110		
Val	Phe	Leu	Cys	Thr	Phe	Val	Gln	Val	Met	Ile	Cys	Val	Val	Trp	Leu
		115					120					125			
Tyr	Asn	Ala	Pro	Pro	Ser	Ser	Tyr	Arg	Asn	Tyr	Asp	Ile	Asp	Glu	Met
	130					135					140				
Ile	Phe	Ile	Thr	Cys	Asn	Glu	Gly	Ser	Val	Met	Ala	Leu	Gly	Phe	Leu
145					150					155					160
Ile	Gly	Tyr	Thr	Cys	Leu	Leu	Ala	Ala	Ile	Cys	Phe	Phe	Phe	Ala	Phe
				165					170					175	
Lys	Ser	Arg	Lys	Leu	Pro	Glu	Asn	Phe	Thr	Glu	Ala	Lys	Phe	Ile	Thr
			180					185					190		
Phe	Ser	Met	Leu	Ile											
		195													

FIG. 23

10016496-1001

FIG. 24A

Docket No.: 2856.1001-011

Title: "Polycation-Sensing Receptor ..."

Inventors: H. William Harris, *et al.*

490                      500                      510                      520                      530  
\*                      \*                      \*                      \*                      \*  
GGC TAT ACA TGC CTG CTG GCC GCT ATA TGT TTC TTC TTT GCA TTC AAA TCA CGG  
CCG ATA TGT ACG GAC GAC CGG CGA TAT ACA AAG AAG AAA CGT AAG TTT AGT GCC  
Gly Tyr Thr Cys Leu Leu Ala Ala Ile Cys Phe Phe Phe Ala Phe Lys Ser Arg>  
\_\_\_a\_\_\_a\_\_\_a\_\_\_a\_\_\_a\_\_\_a\_\_\_a\_\_\_ORF RF[2] \_\_\_a\_\_\_a\_\_\_a\_\_\_a\_\_\_a\_\_\_a\_\_\_a\_\_\_>  
  
540                      550                      560                      570                      580                      590  
\*                      \*                      \*                      \*                      \*                      \*  
AAA CTT CCA GAA AAC TTC ACC GAG GCT AAG TTC ATC ACT TTT AGT ATG CTC ATA  
TTT GAA GGT CTT TTG AAG TGG CTC CGA TTC AAG TAG TGA AAA TCA TAC GAG TAT  
Lys Leu Pro Glu Asn Phe Thr Glu Ala Lys Phe Ile Thr Phe Ser Met Leu Ile>  
\_\_\_a\_\_\_a\_\_\_a\_\_\_a\_\_\_a\_\_\_a\_\_\_a\_\_\_ORF RF[2] \_\_\_a\_\_\_a\_\_\_a\_\_\_a\_\_\_a\_\_\_a\_\_\_a\_\_\_>  
  
TT  
AA

10016496-121001

FIG. 24B



tg	tcg	tgg	acg	gag	ccc	ttt	ggg	atc	gcg	ttg	gcc	ata	tgt	gca	gcg	47
Ser	Trp	Thr	Glu	Pro	Phe	Gly	Ile	Ala	Leu	Ala	Ile	Cys	Ala	Ala		
1				5				10						15		
ctg	ggt	gtt	gcc	ttg	acg	ggc	ttc	gtg	atg	gcc	gtc	ttt	atc	aga	ttc	95
Leu	Gly	Val	Ala	Leu	Thr	Gly	Phe	Val	Met	Ala	Val	Phe	Ile	Arg	Phe	
				20				25						30		
cgc	aac	acc	cca	ata	gtg	aag	gcc	acg	aac	cga	gaa	ctg	tcc	tat	gtc	143
Arg	Asn	Thr	Pro	Ile	Val	Lys	Ala	Thr	Asn	Arg	Glu	Leu	Ser	Tyr	Val	
			35					40					45			
ctc	ctg	ttc	tct	ctc	atc	tgt	tgc	ttc	tcc	agt	tcc	ctc	atc	ttt	att	191
Leu	Leu	Phe	Ser	Leu	Ile	Cys	Cys	Phe	Ser	Ser	Ser	Leu	Ile	Phe	Ile	
		50					55					60				
gga	gag	ccg	cag	gat	tgg	atg	tgt	cgt	tta	cgc	caa	cct	gcc	ttt	ggg	239
Gly	Glu	Pro	Gln	Asp	Trp	Met	Cys	Arg	Leu	Arg	Gln	Pro	Ala	Phe	Gly	
	65					70					75					
atc	agt	ttt	gtt	ctc	tgt	atc	tcc	tgc	atc	ctt	gtg	aaa	act	aat	aga	287
Ile	Ser	Phe	Val	Leu	Cys	Ile	Ser	Cys	Ile	Leu	Val	Lys	Thr	Asn	Arg	
	80				85					90					95	
gta	ctc	tta	gta	ttt	gaa	gcc	aag	atc	ccc	aca	agt	ctc	cat	cgt	aaa	335
Val	Leu	Leu	Val	Phe	Glu	Ala	Lys	Ile	Pro	Thr	Ser	Leu	His	Arg	Lys	
				100					105					110		
tgg	tgg	ggg	tta	aac	ctt	cag	ttt	ttg	ctg	gtg	ttt	ctg	tgc	aca	ttt	383
Trp	Trp	Gly	Leu	Asn	Leu	Gln	Phe	Leu	Leu	Val	Phe	Leu	Cys	Thr	Phe	
			115					120					125			
gtc	caa	gtc	atg	atc	tgt	gtt	gtc	tgg	ctg	tac	aat	gcc	cct	ccc	tcc	431
Val	Gln	Val	Met	Ile	Cys	Val	Val	Trp	Leu	Tyr	Asn	Ala	Pro	Pro	Ser	
		130				135						140				
agt	tac	agg	aat	tat	gac	ata	gat	gag	atg	att	ttt	atc	aca			473
Ser	Tyr	Arg	Asn	Tyr	Asp	Ile	Asp	Glu	Met	Ile	Phe	Ile	Thr			
	145					150					155					
tg																475

FIG. 25

10016496-1001

Ser	Trp	Thr	Glu	Pro	Phe	Gly	Ile	Ala	Leu	Ala	Ile	Cys	Ala	Ala	Leu
1				5					10					15	
Gly	Val	Ala	Leu	Thr	Gly	Phe	Val	Met	Ala	Val	Phe	Ile	Arg	Phe	Arg
			20					25					30		
Asn	Thr	Pro	Ile	Val	Lys	Ala	Thr	Asn	Arg	Glu	Leu	Ser	Tyr	Val	Leu
		35					40					45			
Leu	Phe	Ser	Leu	Ile	Cys	Cys	Phe	Ser	Ser	Ser	Leu	Ile	Phe	Ile	Gly
	50					55					60				
Glu	Pro	Gln	Asp	Trp	Met	Cys	Arg	Leu	Arg	Gln	Pro	Ala	Phe	Gly	Ile
65					70				75						80
Ser	Phe	Val	Leu	Cys	Ile	Ser	Cys	Ile	Leu	Val	Lys	Thr	Asn	Arg	Val
				85					90					95	
Leu	Leu	Val	Phe	Glu	Ala	Lys	Ile	Pro	Thr	Ser	Leu	His	Arg	Lys	Trp
			100					105					110		
Trp	Gly	Leu	Asn	Leu	Gln	Phe	Leu	Leu	Val	Phe	Leu	Cys	Thr	Phe	Val
		115					120					125			
Gln	Val	Met	Ile	Cys	Val	Val	Trp	Leu	Tyr	Asn	Ala	Pro	Pro	Ser	Ser
	130					135					140				
Tyr	Arg	Asn	Tyr	Asp	Ile	Asp	Glu	Met	Ile	Phe	Ile	Thr			
145					150					155					

FIG. 26

10016496-1001

10 20 30 40 50  
 \* \* \* \* \*  
 TG TCG TGG ACG GAG CCC TTT GGG ATC GCG TTG GCC ATA TGT GCA GCG CTG GGT  
 AC AGC ACC TGC CTC GGG AAA CCC TAG CGC AAC CGG TAT ACA CGT CGC GAC CCA  
 Ser Trp Thr Glu Pro Phe Gly Ile Ala Leu Ala Ile Cys Ala Ala Leu Gly>  
 \_ \_ \_ \_ \_ a \_ \_ \_ \_ \_ a \_ \_ \_ \_ \_ a \_ \_ \_ \_ \_ ORF RF[3] \_ \_ \_ \_ \_ a \_ \_ \_ \_ \_ a \_ \_ \_ \_ \_ a \_ \_ \_ \_ \_ >

60 70 80 90 100  
 \* \* \* \* \*  
 GTT GCC TTG ACG GGC TTC GTG ATG GCC GTC TTT ATC AGA TTC CGC AAC ACC CCA  
 CAA CGG AAC TGC CCG AAG CAC TAC CGG CAG AAA TAG TCT AAG GCG TTG TGG GGT  
 Val Ala Leu Thr Gly Phe Val Met Ala Val Phe Ile Arg Phe Arg Asn Thr Pro>  
 \_ \_ \_ \_ \_ a \_ \_ \_ \_ \_ a \_ \_ \_ \_ \_ a \_ \_ \_ \_ \_ ORF RF[3] \_ \_ \_ \_ \_ a \_ \_ \_ \_ \_ a \_ \_ \_ \_ \_ a \_ \_ \_ \_ \_ >

110 120 130 140 150 160  
 \* \* \* \* \*  
 ATA GTG AAG GCC ACG AAC CGA GAA CTG TCC TAT GTC CTC CTG TTC TCT CTC ATC  
 TAT CAC TTC CGG TGC TTG GCT CTT GAC AGG ATA CAG GAG GAC AAG AGA GAG TAG  
 Ile Val Lys Ala Thr Asn Arg Glu Leu Ser Tyr Val Leu Leu Phe Ser Leu Ile>  
 \_ \_ \_ \_ \_ a \_ \_ \_ \_ \_ a \_ \_ \_ \_ \_ a \_ \_ \_ \_ \_ ORF RF[3] \_ \_ \_ \_ \_ a \_ \_ \_ \_ \_ a \_ \_ \_ \_ \_ a \_ \_ \_ \_ \_ >

170 180 190 200 210  
 \* \* \* \* \*  
 TGT TGC TTC TCC AGT TCC CTC ATC TTT ATT GGA GAG CCG CAG GAT TGG ATG TGT  
 ACA ACG AAG AGG TCA AGG GAG TAG AAA TAA CCT CTC GGC GTC CTA ACC TAC ACA  
 Cys Cys Phe Ser Ser Ser Leu Ile Phe Ile Gly Glu Pro Gln Asp Trp Met Cys>  
 \_ \_ \_ \_ \_ a \_ \_ \_ \_ \_ a \_ \_ \_ \_ \_ a \_ \_ \_ \_ \_ ORF RF[3] \_ \_ \_ \_ \_ a \_ \_ \_ \_ \_ a \_ \_ \_ \_ \_ a \_ \_ \_ \_ \_ >

220 230 240 250 260  
 \* \* \* \* \*  
 CGT TTA CGC CAA CCT GCC TTT GGG ATC AGT TTT GTT CTC TGT ATC TCC TGC ATC  
 GCA AAT GCG GTT GGA CGG AAA CCC TAG TCA AAA CAA GAG ACA TAG AGG ACG TAG  
 Arg Leu Arg Gln Pro Ala Phe Gly Ile Ser Phe Val Leu Cys Ile Ser Cys Ile>  
 \_ \_ \_ \_ \_ a \_ \_ \_ \_ \_ a \_ \_ \_ \_ \_ a \_ \_ \_ \_ \_ ORF RF[3] \_ \_ \_ \_ \_ a \_ \_ \_ \_ \_ a \_ \_ \_ \_ \_ a \_ \_ \_ \_ \_ >

270 280 290 300 310 320  
 \* \* \* \* \*  
 CTT GTG AAA ACT AAT AGA GTA CTC TTA GTA TTT GAA GCC AAG ATC CCC ACA AGT  
 GAA CAC TTT TGA TTA TCT CAT GAG AAT CAT AAA CTT CGG TTC TAG GGG TGT TCA  
 Leu Val Lys Thr Asn Arg Val Leu Leu Val Phe Glu Ala Lys Ile Pro Thr Ser>  
 \_ \_ \_ \_ \_ a \_ \_ \_ \_ \_ a \_ \_ \_ \_ \_ a \_ \_ \_ \_ \_ ORF RF[3] \_ \_ \_ \_ \_ a \_ \_ \_ \_ \_ a \_ \_ \_ \_ \_ a \_ \_ \_ \_ \_ >

330 340 350 360 370  
 \* \* \* \* \*  
 CTC CAT CGT AAA TGG TGG GGG TTA AAC CTT CAG TTT TTG CTG GTG TTT CTG TGC  
 GAG GTA GCA TTT ACC ACC CCC AAT TTG GAA GTC AAA AAC GAC CAC AAA GAC ACG  
 Leu His Arg Lys Trp Trp Gly Leu Asn Leu Gln Phe Leu Leu Val Phe Leu Cys>  
 \_ \_ \_ \_ \_ a \_ \_ \_ \_ \_ a \_ \_ \_ \_ \_ a \_ \_ \_ \_ \_ ORF RF[3] \_ \_ \_ \_ \_ a \_ \_ \_ \_ \_ a \_ \_ \_ \_ \_ a \_ \_ \_ \_ \_ >

380 390 400 410 420 430  
 \* \* \* \* \*  
 ACA TTT GTC CAA GTC ATG ATC TGT GTT GTC TGG CTG TAC AAT GCC CCT CCC TCC  
 TGT AAA CAG GTT CAG TAC TAG ACA CAA CAG ACC GAC ATG TTA CGG GGA GGG AGG  
 Thr Phe Val Gln Val Met Ile Cys Val Val Trp Leu Tyr Asn Ala Pro Pro Ser>  
 \_ \_ \_ \_ \_ a \_ \_ \_ \_ \_ a \_ \_ \_ \_ \_ a \_ \_ \_ \_ \_ ORF RF[3] \_ \_ \_ \_ \_ a \_ \_ \_ \_ \_ a \_ \_ \_ \_ \_ a \_ \_ \_ \_ \_ >

440 450 460 470  
 \* \* \* \* \*  
 AGT TAC AGG AAT TAT GAC ATA GAT GAG ATG ATT TTT ATC ACA TG  
 TCA ATG TCC TTA ATA CTG TAT CTA CTC TAC TAA AAA TAG TGT AC  
 Ser Tyr Arg Asn Tyr Asp Ile Asp Glu Met Ile Phe Ile Thr>  
 \_ \_ \_ \_ \_ a \_ \_ \_ \_ \_ a \_ \_ \_ \_ \_ ORF RF[3] \_ \_ \_ \_ \_ a \_ \_ \_ \_ \_ a \_ \_ \_ \_ \_ a \_ \_ \_ \_ \_ >

FIG. 27

10016496 11001

a	cgc	cca	ggg	att	gaa	aaa	ttt	gag	aag	gag	atg	gag	gag	cga	gac	atc	49
Arg	Pro	Gly	Ile	Glu	Lys	Phe	Glu	Lys	Glu	Met	Glu	Glu	Arg	Asp	Ile		
1				5				10						15			
tgc	att	cac	ctt	aat	gaa	ctt	atc	tct	cag	tat	ttt	gag	gay	cat	gaa	97	
Cys	Ile	His	Leu	Asn	Glu	Leu	Ile	Ser	Gln	Tyr	Phe	Glu	Asp	His	Glu		
			20					25					30				
atc	caa	gcg	ctg	gct	gac	agg	att	gag	aac	tcc	aca	gct	aaa	gtc	atc	145	
Ile	Gln	Ala	Leu	Ala	Asp	Arg	Ile	Glu	Asn	Ser	Thr	Ala	Lys	Val	Ile		
		35					40					45					
gta	gtg	ttt	gcc	agc	ggc	cca	gat	atc	gag	cct	tta	atc	aaa	gag	atg	193	
Val	Val	Phe	Ala	Ser	Gly	Pro	Asp	Ile	Glu	Pro	Leu	Ile	Lys	Glu	Met		
	50					55					60						
gtg	agg	aga	aac	atc	aca	gac	cgt	atc	tgg	tta	gcc	agt	gaa	gcg	tgg	241	
Val	Arg	Arg	Asn	Ile	Thr	Asp	Arg	Ile	Trp	Leu	Ala	Ser	Glu	Ala	Trp		
65					70				75						80		
gct	agc	tcc	tct	ctt	ata	gct	aaa	cca	gag	tat	ctt	gat	gtt	gtg	gct	289	
Ala	Ser	Ser	Ser	Leu	Ile	Ala	Lys	Pro	Glu	Tyr	Leu	Asp	Val	Val	Ala		
				85					90					95			
ggg	act	atc	ggc	ttt	gct	ctc	aag	gca	ggg	cat	att	cct	ggc	tta	aga	337	
Gly	Thr	Ile	Gly	Phe	Ala	Leu	Lys	Ala	Gly	His	Ile	Pro	Gly	Leu	Arg		
			100					105					110				
gag	ttc	cta	cag	caa	gtg	caa	cca	aag	aga	gac	agt	cat	aat	gaa	ttt	385	
Glu	Phe	Leu	Gln	Gln	Val	Gln	Pro	Lys	Arg	Asp	Ser	His	Asn	Glu	Phe		
		115					120					125					
gtc	agg	gag	ttt	tgg	gaa	gaa	acc	ttc	aac	tgt	tat	ctg	gaa	gac	agc	433	
Val	Arg	Glu	Phe	Trp	Glu	Glu	Thr	Phe	Asn	Cys	Tyr	Leu	Glu	Asp	Ser		
	130					135					140						
cag	aga	cag	cag	gaa	agt	gag	aat	ggc	agc	aca	agt	ttc	agg	cct	ttg	481	
Gln	Arg	Gln	Gln	Glu	Ser	Glu	Asn	Gly	Ser	Thr	Ser	Phe	Arg	Pro	Leu		
145					150					155					160		
tgt	act	ggt	gag	gaa	gac	atc	aca	agt	gtt	gag	acc	ccg	tac	ttg	gac	529	
Cys	Thr	Gly	Glu	Glu	Asp	Ile	Thr	Ser	Val	Glu	Thr	Pro	Tyr	Leu	Asp		
				165					170					175			
tac	aca	cac	ttt	cgt	atc	tcc	tat	aac	gtg	tat	gtt	gca	gtt	tat	tcc	577	
Tyr	Thr	His	Phe	Arg	Ile	Ser	Tyr	Asn	Val	Tyr	Val	Ala	Val	Tyr	Ser		
			180					185					190				
att	gca	cag	gcc	ctg	cag	gac	ata	ctc	acc	tgc	aca	cct	gga	cat	gga	625	
Ile	Ala	Gln	Ala	Leu	Gln	Asp	Ile	Leu	Thr	Cys	Thr	Pro	Gly	His	Gly		
		195					200					205					
ctc	ttt	gcc	aac	aat	tcc	tgt	gcc	gat	ata	aag	aaa	atg	gaa	gca	tgg	673	
Leu	Phe	Ala	Asn	Asn	Ser	Cys	Ala	Asp	Ile	Lys	Lys	Met	Glu	Ala	Trp		
	210					215					220						

FIG. 28A

cag gcc ctg aag cag ctt-aga cat ttg aac tac acc aac agc atg ggg	721
Gln Ala Leu Lys Gln Leu Arg His Leu Asn Tyr Thr Asn Ser Met Gly	
225 230 235 240	
gaa aag atg cac ttt gat gag aac tca gac atg gca tca aac tac acc	769
Glu Lys Met His Phe Asp Glu Asn Ser Asp Met Ala Ser Asn Tyr Thr	
245 250 255	
att ata aac tgg cac cgg tct gct gag gat ggc tct gtg gtg ttt gag	817
Ile Ile Asn Trp His Arg Ser Ala Glu Asp Gly Ser Val Val Phe Glu	
260 265 270	
gac gtg gga tac tac agc atg cac gtc aag aga gga gcc aaa ctg ttc	865
Asp Val Gly Tyr Tyr Ser Met His Val Lys Arg Gly Ala Lys Leu Phe	
275 280 285	
att gac aag aca aag att ttg tgg aat gga tac agt tcg gag gcg cca	913
Ile Asp Lys Thr Lys Ile Leu Trp Asn Gly Tyr Ser Ser Glu Ala Pro	
290 295 300	
ttc tct aat tgc agt gag gac tgt gaa cct ggt aca agg aag ggg atc	961
Phe Ser Asn Cys Ser Glu Asp Cys Glu Pro Gly Thr Arg Lys Gly Ile	
305 310 315 320	
att gac agt atg ccc aca tgt tgc ttt gaa tgc act gag tgc tca gat	1009
Ile Asp Ser Met Pro Thr Cys Cys Phe Glu Cys Thr Glu Cys Ser Asp	
325 330 335	
gga gag tac agt aat cat aaa gat gcc agt gtt tgc acc aag tgt cca	1057
Gly Glu Tyr Ser Asn His Lys Asp Ala Ser Val Cys Thr Lys Cys Pro	
340 345 350	
tat aac tct tgg tcc aat ggg aat cac aca ttc tgc ttc ctg aag gaa	1105
Tyr Asn Ser Trp Ser Asn Gly Asn His Thr Phe Cys Phe Leu Lys Glu	
355 360 365	
atc gag ttt ctc tcc tgg aca gaa cca ttc ggg ata gct ttg gcc ata	1153
Ile Glu Phe Leu Ser Trp Thr Glu Pro Phe Gly Ile Ala Leu Ala Ile	
370 375 380	
tgt gca gta ctg ggt gtg ctc ttg aca gct ttt gtg atc gga gtc ttt	1201
Cys Ala Val Leu Gly Val Leu Leu Thr Ala Phe Val Ile Gly Val Phe	
385 390 395 400	
gtc aga ttc cgc aac acc cca ata gtg aag gcc aca aac cga gaa ctg	1249
Val Arg Phe Arg Asn Thr Pro Ile Val Lys Ala Thr Asn Arg Glu Leu	
405 410 415	
tcc tac gtt ctc ctg twc tca ctt atc tgt tgc ttc tca agc tcc ctc	1297
Ser Tyr Val Leu Leu Xaa Ser Leu Ile Cys Cys Phe Ser Ser Ser Leu	
420 425 430	
akc ttc atc gg	1308
Xaa Phe Ile	
435	

FIG. 28B

Arg Pro Gly Ile Glu Lys Phe Glu Lys Glu Met Glu Glu Arg Asp Ile  
 1 5 10 15  
 Cys Ile His Leu Asn Glu Leu Ile Ser Gln Tyr Phe Glu Asp His Glu  
 20 25 30  
 Ile Gln Ala Leu Ala Asp Arg Ile Glu Asn Ser Thr Ala Lys Val Ile  
 35 40 45  
 Val Val Phe Ala Ser Gly Pro Asp Ile Glu Pro Leu Ile Lys Glu Met  
 50 55 60  
 Val Arg Arg Asn Ile Thr Asp Arg Ile Trp Leu Ala Ser Glu Ala Trp  
 65 70 75 80  
 Ala Ser Ser Ser Leu Ile Ala Lys Pro Glu Tyr Leu Asp Val Val Ala  
 85 90 95  
 Gly Thr Ile Gly Phe Ala Leu Lys Ala Gly His Ile Pro Gly Leu Arg  
 100 105 110  
 Glu Phe Leu Gln Gln Val Gln Pro Lys Arg Asp Ser His Asn Glu Phe  
 115 120 125  
 Val Arg Glu Phe Trp Glu Glu Thr Phe Asn Cys Tyr Leu Glu Asp Ser  
 130 135 140  
 Gln Arg Gln Gln Glu Ser Glu Asn Gly Ser Thr Ser Phe Arg Pro Leu  
 145 150 155 160  
 Cys Thr Gly Glu Glu Asp Ile Thr Ser Val Glu Thr Pro Tyr Leu Asp  
 165 170 175  
 Tyr Thr His Phe Arg Ile Ser Tyr Asn Val Tyr Val Ala Val Tyr Ser  
 180 185 190  
 Ile Ala Gln Ala Leu Gln Asp Ile Leu Thr Cys Thr Pro Gly His Gly  
 195 200 205  
 Leu Phe Ala Asn Asn Ser Cys Ala Asp Ile Lys Lys Met Glu Ala Trp  
 210 215 220  
 Gln Ala Leu Lys Gln Leu Arg His Leu Asn Tyr Thr Asn Ser Met Gly  
 225 230 235 240  
 Glu Lys Met His Phe Asp Glu Asn Ser Asp Met Ala Ser Asn Tyr Thr  
 245 250 255  
 Ile Ile Asn Trp His Arg Ser Ala Glu Asp Gly Ser Val Val Phe Glu  
 260 265 270  
 Asp Val Gly Tyr Tyr Ser Met His Val Lys Arg Gly Ala Lys Leu Phe  
 275 280 285  
 Ile Asp Lys Thr Lys Ile Leu Trp Asn Gly Tyr Ser Ser Glu Ala Pro  
 290 295 300  
 Phe Ser Asn Cys Ser Glu Asp Cys Glu Pro Gly Thr Arg Lys Gly Ile  
 305 310 315 320  
 Ile Asp Ser Met Pro Thr Cys Cys Phe Glu Cys Thr Glu Cys Ser Asp  
 325 330 335  
 Gly Glu Tyr Ser Asn His Lys Asp Ala Ser Val Cys Thr Lys Cys Pro  
 340 345 350  
 Tyr Asn Ser Trp Ser Asn Gly Asn His Thr Phe Cys Phe Leu Lys Glu  
 355 360 365  
 Ile Glu Phe Leu Ser Trp Thr Glu Pro Phe Gly Ile Ala Leu Ala Ile  
 370 375 380  
 Cys Ala Val Leu Gly Val Leu Leu Thr Ala Phe Val Ile Gly Val Phe  
 385 390 395 400  
 Val Arg Phe Arg Asn Thr Pro Ile Val Lys Ala Thr Asn Arg Glu Leu  
 405 410 415  
 Ser Tyr Val Leu Leu Xaa Ser Leu Ile Cys Cys Phe Ser Ser Ser Leu  
 420 425 430  
 Xaa Phe Ile  
 435

FIG. 29

FIG. 30A

[illegible]

FIG. 30B



**FULLER**

FIG. 30C

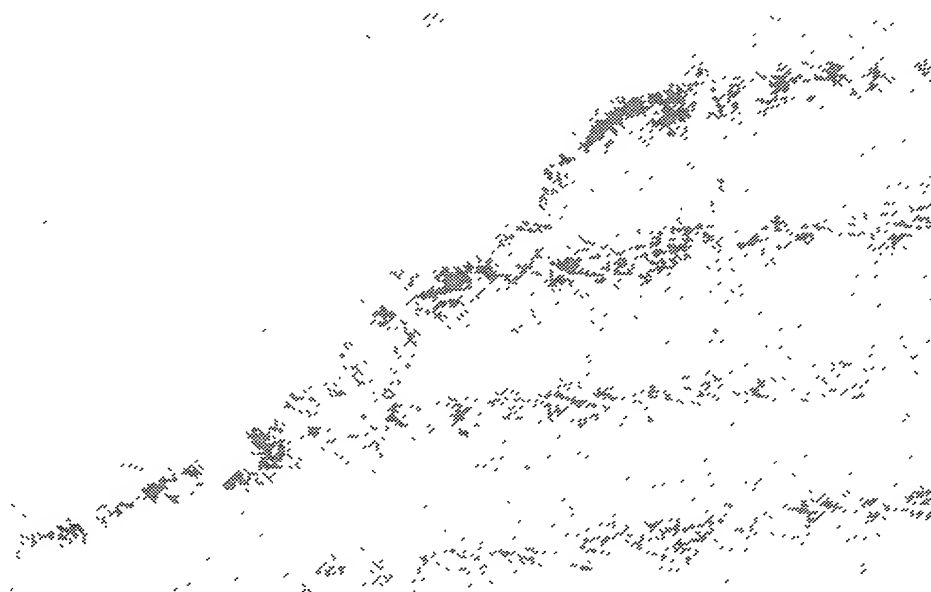


FIG. 31A

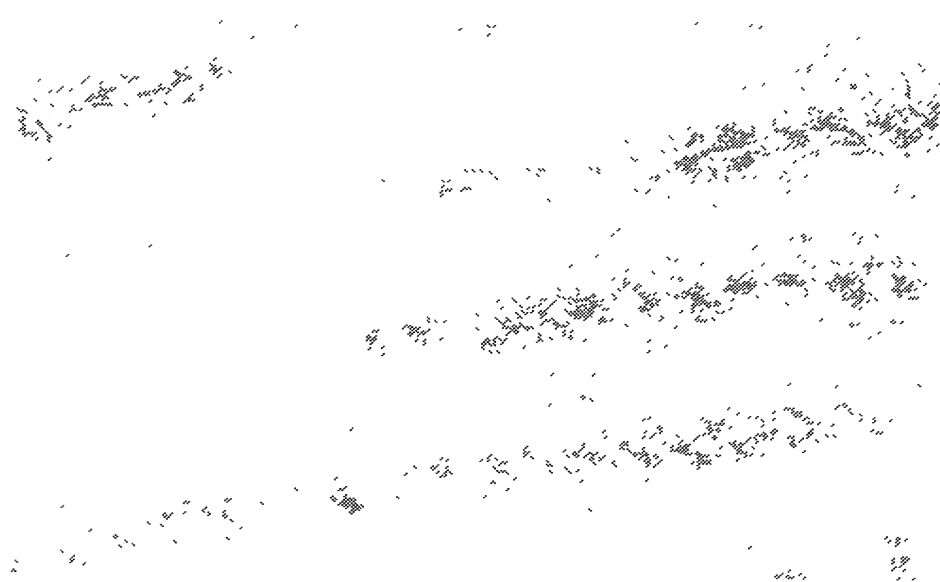


FIG. 31B

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